

# Appendix L

## Second Level Screening Results



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# Appendix L-1

## Second Level Screening Results



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SR 303 Corridor Study  
Second Level Screening Results

Alternative	Safety	Non-Motorized	Traffic Operations	Transit	Right of Way	Economic Vitality	TOTAL
No Build							
Traffic Management							
Multi-modal							
Boulevard							

Segment	Alternative	Cost	Safety		Non-Motorized			Traffic Operations			Transit		ROW		Economic Vitality		TOTAL	
			Total Crash Frequency	Crash Severity	Gaps	Obstructions	Walkability	Segment Delay	Person Mobility	Freight Access	Accessibility	Person Mobility	Property Impacts	Property Acquisitions	Adjacent Property Values	Access to Business		
			Rank	Rank	Rank	Rank	Rank	Rank	Rank	Rank	Rank	Rank	Rank	Rank	Rank	Rank	Rank Total	Rating
1: Burwell to 16th	No Build		4	4	1	4	2	4	4	1	3	4	1	1	4	1	38	3
	Traffic Management	\$	1	2	1	3	2	1	1	1	3	1	3	1	3	1	24	1
	Multi-modal	\$\$	3	3	1	1	1	3	3	1	1	3	2	2	1	1	26	2
	Boulevard	\$\$\$	2	1	1	2	1	2	2	1	2	2	4	1	2	1	24	1
2: 16th to Sheridan	No Build		4	2	3	2	3	3	3	1	3	4	1	1	4	1	35	4
	Traffic Management	\$	3	2	2	2	2	1	1	1	3	1	1	1	3	1	24	2
	Multi-modal	\$\$	2	3	1	1	1	4	4	1	1	3	2	1	2	1	27	3
	Boulevard	\$\$\$	1	1	1	1	1	2	2	1	2	2	3	2	1	1	21	1
3: Sheridan to Riddell	No Build		4	4	1	3	3	3	3	1	3	4	1	1	4	2	37	4
	Traffic Management	\$	3	3	1	3	3	2	2	1	3	3	2	1	3	2	32	3
	Multi-modal	\$\$	2	2	1	2	2	4	4	2	1	1	3	3	1	1	29	2
	Boulevard	\$\$\$	1	1	1	1	1	1	1	2	2	2	4	2	2	1	22	1
4: Riddell to McWilliams	No Build		4	3	2	2	1	4	4	1	2	4	1	1	4	2	35	4
	Traffic Management	\$	3	2	2	2	1	3	3	1	2	3	1	1	3	2	29	3
	Multi-modal	\$\$	2	2	1	1	1	2	2	1	1	2	1	1	2	2	21	2
	Boulevard	\$\$\$	1	1	1	1	1	1	1	2	1	1	1	1	1	1	15	1
TOTAL	No Build		4	4	3	4	4	3	3	1	3	4	1	1	4	3	42	4
	Traffic Management	\$	3	3	2	3	3	2	2	1	3	2	2	1	3	3	33	3
	Multi-modal	\$\$	2	2	1	1	2	4	4	2	1	3	3	3	2	2	32	2
	Boulevard	\$\$\$	1	1	1	2	1	1	1	3	2	1	4	2	1	1	22	1

Segment	Alternative	Cost	Safety		Non-Motorized			Traffic Operations			Transit		ROW		Economic Vitality		TOTAL	
			Total Crash Frequency	Crash Severity	Gaps	Obstructions	Walkability	Segment Delay	Person Mobility	Freight Access	Accessibility	Person Mobility	Property Impacts	Property Acquisitions	Adjacent Property Values	Access to Business		
			Rank	Rank	Rank	Rank	Rank	Rank	Rank	Rank	Rank	Rank	Rank	Rank	Rank	Rank	Rating	Rating
1: Burvell to 16th	No Build		<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	3	<div></div>
	Traffic Management	\$	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	1	<div></div>
	Multi-modal	\$\$	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	2	<div></div>
	Boulevard	\$\$\$	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	1	<div></div>
2: 16th to Sheridan	No Build		<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	4	<div></div>
	Traffic Management	\$	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	2	<div></div>
	Multi-modal	\$\$	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	3	<div></div>
	Boulevard	\$\$\$	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	1	<div></div>
3: Sheridan to Riddell	No Build		<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	4	<div></div>
	Traffic Management	\$	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	3	<div></div>
	Multi-modal	\$\$	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	2	<div></div>
	Boulevard	\$\$\$	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	1	<div></div>
4: Riddell to McWilliams	No Build		<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	4	<div></div>
	Traffic Management	\$	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	3	<div></div>
	Multi-modal	\$\$	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	2	<div></div>
	Boulevard	\$\$\$	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	1	<div></div>
TOTAL	No Build		<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	4	<div></div>
	Traffic Management	\$	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	3	<div></div>
	Multi-modal	\$\$	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	2	<div></div>
	Boulevard	\$\$\$	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	1	<div></div>

Segment	Alternative	ID #	Improvement Description	Safety		Non-Motorized			Traffic Operations			Transit		ROW		Economic Vitality	
				Total Crash Frequency	Crash Severity	Gaps	Obstructions	Walkability	Segment Delay	Person Mobility	Freight Access	Accessibility	Person Mobility	Property Impacts	Property Acquisitions	Adjacent Property Values	Access to Business
1	No Build		No Build	-	-	0	0	0	-	-	0	0	-	0	0	0	0
TOTAL				0.0	0.0	0	0	0	0	7.7	0	0	0.4	0	0	0	0
1	Traffic Management	TM-1	Full Corridor: Adapative Signal Control or Green Wave Signal Control	-	-	0	0	0	-	-	0	0	-	0	0	2	0
		TM-2	Full Corridor: Install ped lighting	-	-	0	0	0	-	-	0	0	-	0	0	2.5	0
		TM-3	Full Corridor: Improve wayfinding and placemaking	-	-	0	0	0	-	-	0	0	-	0	0	2.5	0
		TM-4	Burwell Street: Remove NB Phase, move east pedestrian crossing to west, and convert parking lot entrance to RIRO	-	-	0	0	0	-	-	0	0	-	0	0	2	0
		TM-5	6th Street: Remove EB/WB split phase and provide concurrent lefts	-	-	0	0	0	-	-	0	0	-	0	0	2	0
		TM-6	11th Street: Add eastbound left turn lane, add receiving lane along northbound SR 303	-	-	0	-6	0	-	-	0	0	-	76	0	2	0
TOTAL				-9.6	-2.0	0	-6	0	-83	9.7	0	0	0.4	76	0	13	0
1	Multi-modal	MM-1	Full Corridor: Transit Signal Priority	-	-	0	0	0	-	-	0	0	-	0	0	5	0
		MM-2	Full Corridor: Relocate obstructions to back of sidewalk	-	-	0	-40	0	-	-	0	0	-	0	0	2.5	0
		MM-3	Full Corridor: Install ped lighting	-	-	0	0	0	-	-	0	0	-	0	0	2.5	0
		MM-4	Full Corridor: Improve wayfinding and placemaking	-	-	0	0	0	-	-	0	0	-	0	0	2.5	0
		MM-6	Burwell Street: Add SBL transit turn lane and TSP	-	-	0	-1	0	-	-	0	1	-	50	0	5	0
		MM-7	Burwell to 5th: Remove center islands and replace with c-curb	-	-	0	0	0	-	-	0	0	-	0	0	0	0
		MM-8	6th to 11th: Add TWLTL	-	-	0	-5	0	-	-	0	0	-	0	3,030	0	0
		MM-9	6th to 11th: Reduce gaps in transit stops	-	-	0	0	0	-	-	0	1	-	0	0	5	0
		MM-10	6th to 11th: Install new pedestrian crossing with ped button	-	-	0	0	1	-	-	0	1	-	0	0	0	0
		MM-11	13th to 16th: Relocate bus stops to intersections	-	-	0	0	0	-	-	0	1	-	0	0	5	0
TOTAL				-8.1	-1.4	0	-46	1	-32	8.4	0	4	0.4	50	3,030	28	0
1	Boulevard	B-1	Full Corridor: Transit Signal Priority	-	-	0	0	0	-	-	0	0	-	0	0	5	0
		B-2	Full Corridor: Underground utilities	-	-	0	-40	0	-	-	0	0	-	0	0	2.5	0
		B-3	Full Corridor: Install ped lighting	-	-	0	0	0	-	-	0	0	-	0	0	2.5	0
		B-4	Full Corridor: Improve wayfinding and placemaking	-	-	0	0	0	-	-	0	0	-	0	0	2.5	0
		B-7	Burwell Street: Convert signal to roundabout, close access to parking lot	-	-	0	0	0	-	-	0	0	-	189	0	4.5	0
		B-8	6th to 11th: Install new pedestrian crossing with ped button	-	-	0	0	1	-	-	0	1	-	0	0	0	0
TOTAL				-9.0	-3.2	0	-40	1	-78	9.6	0	1	0.4	189	0	17	0

Segment	Alternative	ID #	Improvement Description	Safety		Non-Motorized			Traffic Operations			Transit		ROW		Economic Vitality	
				Total Crash Frequency	Crash Severity	Gaps	Obstructions	Walkability	Segment Delay	Person Mobility	Freight Access	Accessibility	Person Mobility	Property Impacts	Property Acquisitions	Adjacent Property Values	Access to Business
2	No Build		No Build	-	-	0	0	0	-	-	0	0	-	0	0	0	0
TOTAL				0.0	0.0	0	0	0	0	14.8	0	0	0.8	0	0	0	0
2	Traffic Management	TM-1	Full Corridor: Adapative Signal Control or Green Wave Signal Control	-	-	0	0	0	-	-	0	0	-	0	0	2	0
		TM-2	Full Corridor: Install ped lighting	-	-	0	0	0	-	-	0	0	-	0	0	2.5	0
		TM-3	Full Corridor: Improve wayfinding and placemaking	-	-	0	0	0	-	-	0	0	-	0	0	2.5	0
		TM-7	Warren Ave Bridge: Improve non-motorized connection off of Warren Ave Bridge to 18th	-	-	-50	0	0	-	-	0	0	-	0	0	0	0
		TM-8	Warren Ave Bridge: Install cycle track on both sides	-	-	0	0	0	-	-	0	0	-	0	0	0	0
		TM-9	Warren Ave Bridge: Improve wayfinding for cycles	-	-	0	0	0	-	-	0	0	-	0	0	0	0
		TM-10	Callahan Drive: Install shared-use path along tunnel undercrossing	-	-	0	0	1	-	-	0	0	-	0	0	0	0
		TM-11	Callahan to Fuson: Complete bicycle connection to Almira Dr	-	-	0	0	0	-	-	0	0	-	0	0	0	0
		TM-12	Sheridan Road: Remove EB/WB split phase and replace with protected/permitted, convert westbound thru-left lane to thru only	-	-	0	0	0	-	-	0	0	-	0	0	2	0
TOTAL				-0.7	0.0	-50	0	1	-28	17.4	0	0	0.9	0	0	9	0
2	Multi-modal	MM-1	Full Corridor: Transit Signal Priority	-	-	0	0	0	-	-	0	0	-	0	0	5	0
		MM-2	Full Corridor: Relocate obstructions to back of sidewalk	-	-	0	-1	0	-	-	0	0	-	0	0	2.5	0
		MM-3	Full Corridor: Install ped lighting	-	-	0	0	0	-	-	0	0	-	0	0	2.5	0
		MM-4	Full Corridor: Improve wayfinding and placemaking	-	-	0	0	0	-	-	0	0	-	0	0	2.5	0
		MM-12	18th Street: Install shared-use path along new tunnel undercrossing	-	-	0	0	0	-	-	0	0	-	0	0	0	0
		MM-13	Warren Ave Bridge: Improve non-motorized connection off of Warren Ave Bridge to 18th	-	-	-50	0	0	-	-	0	0	-	0	0	0	0
		MM-14	Warren Ave Bridge: Install cycle track on west side	-	-	0	0	0	-	-	0	0	-	0	0	0	0
		MM-15	Warren Ave Bridge: Improve wayfinding for cycles	-	-	0	0	0	-	-	0	0	-	0	0	0	0
		MM-16	Warren Ave Bridge: Install viewpoint	-	-	0	0	0	-	-	0	0	-	0	0	0	0
		MM-17	Warren Ave Bridge: Install safety call boxes and/or beacon	-	-	0	0	0	-	-	0	0	-	0	0	0	0
		MM-18	Warren Ave Bridge: Install high railings to limit ability to throw items off of bridge; add call box for help	-	-	0	0	0	-	-	0	0	-	0	0	2.5	0
		MM-19	Warren Ave Bridge: Widen sidewalks along east side and install barriers	-	-	0	0	0	-	-	0	0	-	0	0	0	0
		MM-20	Callahan Drive: Widen and complete sidewalks near intersection	-	-	-1,650	-11	0	-	-	0	1	-	147	0	0	0
		MM-21	Callahan Drive: Convert interchange to signal control	-	-	0	0	2	-	-	0	1	-	0	0	2	0
		MM-22	Callahan Drive: Install shared-use path along tunnel undercrossing	-	-	0	0	1	-	-	0	0	-	0	0	0	0
		MM-23	Callahan to Fuson: Complete bicycle connection to Almira Dr	-	-	0	0	0	-	-	0	0	-	0	0	0	0
TOTAL				-1.9	0.5	-1,700	-12	3	112	9.4	0	2	0.8	147	0	17	0

Segment	Alternative	ID #	Improvement Description	Safety		Non-Motorized			Traffic Operations			Transit		ROW		Economic Vitality	
				Total Crash Frequency	Crash Severity	Gaps	Obstructions	Walkability	Segment Delay	Person Mobility	Freight Access	Accessibility	Person Mobility	Property Impacts	Property Acquisitions	Adjacent Property Values	Access to Business
2	Boulevard	B-1	Full Corridor: Transit Signal Priority	-	-	0	0	0	-	-	0	0	-	0	0	5	0
		B-2	Full Corridor: Underground utilities	-	-	0	-1	0	-	-	0	0	-	0	0	2.5	0
		B-3	Full Corridor: Install ped lighting	-	-	0	0	0	-	-	0	0	-	0	0	2.5	0
		B-4	Full Corridor: Improve wayfinding and placemaking	-	-	0	0	0	-	-	0	0	-	0	0	2.5	0
		B-9	17th Street: Remove northbound add lane and require a t-intersection for right turns	-	-	0	0	0	-	-	0	0	-	0	0	2	0
		B-10	Warren Ave Bridge: Improve non-motorized connection off of Warren Ave Bridge to 18th	-	-	-50	0	0	-	-	0	0	-	0	0	0	0
		B-11	Warren Ave Bridge: Install cycle track on both sides	-	-	0	0	0	-	-	0	0	-	0	0	0	0
		B-12	Warren Ave Bridge: Improve wayfinding for cycles	-	-	0	0	0	-	-	0	0	-	0	0	0	0
		B-13	Warren Ave Bridge: Install viewpoint	-	-	0	0	0	-	-	0	0	-	0	0	0	0
		B-14	Warren Ave Bridge: Install safety call boxes and/or beacon	-	-	0	0	0	-	-	0	0	-	0	0	0	0
		B-15	Warren Ave Bridge: Install high railings to limit ability to throw items off of bridge; add call box for help	-	-	0	0	0	-	-	0	0	-	0	0	2.5	0
		B-16	Callahan Drive: Widen and complete sidewalks near intersection	-	-	-1,650	-11	0	-	-	0	1	-	147	0	0	0
		B-17	Callahan Drive: Convert interchange to roundabout	-	-	0	0	2	-	-	0	0	-	0	0	4.5	0
		B-18	Callahan Drive: Install shared-use path along tunnel undercrossing	-	-	0	0	1	-	-	0	0	-	0	0	0	0
		B-19	Callahan to Fuson: Complete bicycle connection to Almira Dr	-	-	0	0	0	-	-	0	0	-	0	0	0	0
		B-20	Callahan to Sheridan: median control	-	-	0	0	0	-	-	0	0	-	0	0	1.5	0
		B-21	Sheridan Road: Convert signal to roundabout	-	-	0	-1	0	-	-	0	0	-	2,520	868	4.5	0
TOTAL				-2.4	-4.9	-1,700	-12	3	-26	17.2	0	1	0.9	2,667	868	28	0
3	No Build		No Build	-	-	0	0	0	-	-	0	0	-	0	0	0	0
TOTAL				0.0	0.0	0	0	0	0	9.2	0	0	0.2	0	0	0	0
3	Traffic Management	TM-1	Full Corridor: Adapative Signal Control or Green Wave Signal Control	-	-	0	0	0	-	-	0	0	-	0	0	2	0
		TM-2	Full Corridor: Install ped lighting	-	-	0	0	0	-	-	0	0	-	0	0	2.5	0
		TM-3	Full Corridor: Improve wayfinding and placemaking	-	-	0	0	0	-	-	0	0	-	0	0	2.5	0
		TM-13	NE Riddell Road: Add southbound left turn lane, add receiving lane along eastbound NE Riddell	-	-	0	0	0	-	-	0	0	-	76	0	2	0
TOTAL				-4.7	-0.8	0	0	0	-33	10.5	0	0	0.2	76	0	9	0

Segment	Alternative	ID #	Improvement Description	Safety		Non-Motorized			Traffic Operations			Transit		ROW		Economic Vitality	
				Total Crash Frequency	Crash Severity	Gaps	Obstructions	Walkability	Segment Delay	Person Mobility	Freight Access	Accessibility	Person Mobility	Property Impacts	Property Acquisitions	Adjacent Property Values	Access to Business
3	Multi-modal	MM-1	Full Corridor: Transit Signal Priority	-	-	0	0	0	-	-	0	0	-	0	0	5	0
		MM-2	Full Corridor: Relocate obsutructions to back of sidewalk	-	-	0	-12	0	-	-	0	0	-	0	0	2.5	0
		MM-3	Full Corridor: Install ped lighting	-	-	0	0	0	-	-	0	0	-	0	0	2.5	0
		MM-4	Full Corridor: Improve wayfinding and placemaking	-	-	0	0	0	-	-	0	0	-	0	0	2.5	0
		MM-5	North End: Widen sidewalks to 10' on east and west side	-	-	0	-10	0	-	-	0	1	-	1,134	0	0	0
		MM-24	Sheridan to Hollis: Add northbound BAT lane (SUB-OPTIONS)	-	-	0	0	0	-	-	3	1	-	372	5,200	5	1
		MM-25	Sheridan to Sylvan: Improve pedestrian connectivity from neighborhoods to transit	-	-	0	0	0	-	-	0	1	-	674	0	5	0
		MM-26	Dibb Street: Install new ped crossing with ped button	-	-	0	0	2	-	-	0	1	-	0	0	0	0
		MM-27	Sylvan Way: Relocate bus stops to intersection	-	-	0	0	0	-	-	0	1	-	0	0	5	0
		MM-28	Sylvan to NE Riddell: Improve pedestrian connectivity from neighborhoods to transit	-	-	0	0	0	-	-	0	1	-	0	0	5	0
		MM-29	E Broad Street: Install bus pullout across from new transit center	-	-	0	0	0	-	-	0	1	-	0	0	5	0
		MM-30	E Broad Street: Improve pedestrian connectivity from neighborhoods to Wheaton Way TC	-	-	0	0	0	-	-	0	1	-	0	0	0	0
		MM-31	Hollis Street: Install northbound u-turn	-	-	0	0	0	-	-	0	0	-	0	0	2	0
		MM-32	NE Riddell Road: Relocate bus stops to intersection	-	-	0	0	0	-	-	0	1	-	0	0	5	0
TOTAL				-28.0	-8.0	0	-22	2	46	7.9	3	9	0.3	2,180	5,200	45	1
3	Boulevard	B-1	Full Corridor: Transit Signal Priority	-	-	0	0	0	-	-	0	0	-	0	0	5	0
		B-2	Full Corridor: Underground utilities	-	-	0	-12	0	-	-	0	0	-	0	0	2.5	0
		B-3	Full Corridor: Install ped lighting	-	-	0	0	0	-	-	0	0	-	0	0	2.5	0
		B-4	Full Corridor: Improve wayfinding and placemaking	-	-	0	0	0	-	-	0	0	-	0	0	2.5	0
		B-5	North End: Widen sidewalks to 10' on east and west side	-	-	0	-10	0	-	-	0	1	-	1,134	0	0	0
		B-6	North End: Median control along blocks	-	-	0	0	0	-	-	3	0	-	0	0	1.5	1
		B-22	Sheridan to Sylvan: Improve pedestrian connectivity from neighborhoods to transit	-	-	0	0	0	-	-	0	1	-	674	0	5	0
		B-23	Dibb Street: Install new ped crossing with ped button	-	-	0	0	2	-	-	0	1	-	0	0	0	0
		B-24	Sylvan Way: Convert signal to roundabout	-	-	0	-2	0	-	-	0	0	-	378	2,820	4.5	0
		B-25	Sylvan to NE Riddell: Improve pedestrian connectivity from neighborhoods to transit	-	-	0	0	0	-	-	0	1	-	0	0	5	0
		B-26	E Broad Street: Convert signal to roundabout	-	-	0	0	1	-	-	0	0	-	189	0	4.5	0
		B-27	E Broad Street: Improve pedestrian connectivity from neighborhoods to Wheaton Way TC	-	-	0	0	0	-	-	0	1	-	0	0	0	0
		B-28	Hollis Street: Convert signal to roundabout	-	-	0	-1	1	-	-	0	0	-	1,890	868	4.5	0
		B-29	NE Riddell Road: Convert signal to roundabout	-	-	0	0	0	-	-	0	0	-	536	0	4.5	0
TOTAL				-39.8	-20.8	0	-25	4	-70	12.4	3	5	0.3	4,801	3,688	42	1

Segment	Alternative	ID #	Improvement Description	Safety		Non-Motorized			Traffic Operations			Transit		ROW		Economic Vitality	
				Total Crash Frequency	Crash Severity	Gaps	Obstructions	Walkability	Segment Delay	Person Mobility	Freight Access	Accessibility	Person Mobility	Property Impacts	Property Acquisitions	Adjacent Property Values	Access to Business
4	No Build		No Build	-	-	0	0	0	-	-	0	0	-	0	0	0	0
TOTAL				0.0	0.0	0	0	0	0	9.9	0	0	0.4	0	0	0	0
4	Traffic Management	TM-1	Full Corridor: Adapative Signal Control or Green Wave Signal Control	-	-	0	0	0	-	-	0	0	-	0	0	2	0
		TM-2	Full Corridor: Install ped lighting	-	-	0	0	0	-	-	0	0	-	0	0	2.5	0
		TM-3	Full Corridor: Improve wayfinding and placemaking	-	-	0	0	0	-	-	0	0	-	0	0	2.5	0
		TM-14	Designate Almira Dr and NE Fuson Rd as bicycle routes	-	-	0	0	0	-	-	0	0	-	0	0	0	0
TOTAL				-3.9	-0.5	0	0	0	-7	10.3	0	0	0.4	0	0	5	0
4	Multi-modal	MM-1	Full Corridor: Transit Signal Priority	-	-	0	0	0	-	-	0	0	-	0	0	5	0
		MM-2	Full Corridor: Relocate obstructions to back of sidewalk	-	-	0	0	0	-	-	0	0	-	0	0	2.5	0
		MM-3	Full Corridor: Install ped lighting	-	-	0	0	0	-	-	0	0	-	0	0	2.5	0
		MM-4	Full Corridor: Improve wayfinding and placemaking	-	-	0	0	0	-	-	0	0	-	0	0	2.5	0
		MM-5	North End: Widen sidewalks to 10' on east and west side	-	-	0	-1	0	-	-	0	1	-	0	0	0	0
		MM-33	Riddell to McWilliams: Complete sidewalks on east and west sides	-	-	-5,000	0	0	-	-	0	0	-	0	0	0	0
		MM-34	Designate Almira Dr and NE Fuson Rd as bicycle routes	-	-	0	0	0	-	-	0	0	-	0	0	0	0
		MM-35	Designate Pine Rd NE as bicycle route	-	-	0	0	0	-	-	0	0	-	0	0	0	0
TOTAL				-6.8	-0.5	-5,000	-1	0	-10	10.4	0	1	0.4	0	0	13	0
4	Boulevard	B-1	Full Corridor: Transit Signal Priority	-	-	0	0	0	-	-	0	0	-	0	0	5	0
		B-2	Full Corridor: Underground utilities	-	-	0	0	0	-	-	0	0	-	0	0	2.5	0
		B-3	Full Corridor: Install ped lighting	-	-	0	0	0	-	-	0	0	-	0	0	2.5	0
		B-4	Full Corridor: Improve wayfinding and placemaking	-	-	0	0	0	-	-	0	0	-	0	0	2.5	0
		B-5	North End: Widen sidewalks to 10' on east and west side	-	-	0	-1	0	-	-	0	1	-	0	0	0	0
		B-6	North End: Median control along blocks	-	-	0	0	0	-	-	1	0	-	0	0	1.5	1
		B-30	Riddell to McWilliams: Complete sidewalks on east and west sides	-	-	-5,000	0	0	-	-	0	0	-	0	0	0	0
		B-31	NE McWilliams Road: Convert signal to roundabout	-	-	0	0	0	-	-	0	0	-	0	0	4.5	0
		B-32	NE Furneys Ln: install northbound and southbound u-turns	-	-	0	0	0	-	-	0	0	-	0	0	2	0
		B-33	NE Fuson Rd: install northbound and southbound u-turns	-	-	0	0	0	-	-	0	0	-	0	0	2	0
		B-34	Designate Almira Dr and NE Fuson Rd as bicycle routes	-	-	0	0	0	-	-	0	0	-	0	0	0	0
		B-35	Designate Pine Rd NE as bicycle route	-	-	0	0	0	-	-	0	0	-	0	0	0	0
TOTAL				-23.0	-8.6	-5,000	-1	0	-35	11.7	1	1	0.5	0	0	23	1

Segment	Alternative	Intersection	Improvement Description	Safety															
				Total Crash Frequency								Crash Severity							
				No Build Crash Rate (KABCO)	HSM Rate	CMF 1	CMF 2	Notes	Build Crash Rate	Change	Rounded	No Build Crash Rate (KABC)	HSM Rate	CMF 1	CMF 2	Notes	Build Crash Rate (KABC)	Change	Rounded
1	No Build	Burwell (SR 304)		5.4		1.00	1.00		5.4	0.0		1.9		1.00	1.00		1.9	0.0	
				1.3		1.00	1.00		1.3	0.0		0.4		1.00	1.00		0.4	0.0	
		6th Street		5.9		1.00	1.00		5.9	0.0		2.1		1.00	1.00		2.1	0.0	
				5.7		1.00	1.00		5.7	0.0		1.9		1.00	1.00		1.9	0.0	
		11th Street		13.3		1.00	1.00		13.3	0.0		4.9		1.00	1.00		4.9	0.0	
				2.9		1.00	1.00		2.9	0.0		0.9		1.00	1.00		0.9	0.0	
		13th Street		15.9		1.00	1.00		15.9	0.0		6.0		1.00	1.00		6.0	0.0	
				6.0		1.00	1.00		6.0	0.0		2.0		1.00	1.00		2.0	0.0	
		16th Street		8.4		1.00	1.00		8.4	0.0		2.7		1.00	1.00		2.7	0.0	
TOTAL				64.8					64.8	0.0	0	22.8					22.8	0.0	0
1	Traffic Management	Burwell (SR 304)	Burwell Street: ASCT, Remove NB Phase, move east pedestrian crossing and convert parking lot entrance to RIRO	5.4	3.9	0.83	1.00	#6856 (Install adaptive traffic signal control)	3.2	-2.2		1.9	1.3	0.92	1.00	#6857 (Install adaptive traffic signal control)	1.2	-0.7	
				1.3	1.3	1.00	1.00		1.3	0.0		0.4	0.4	1.00	1.00		0.4	0.0	
		6th Street	6th Street: ASCT, Remove EB/WB split phase and provide concurrent lefts	5.9	5.9	0.83	1.00	#6856 (Install adaptive traffic signal control)	4.9	-1.0		2.1	2.1	0.92	1.00	#6857 (Install adaptive traffic signal control)	1.9	-0.2	
				5.7	5.7	1.00	1.00		5.7	0.0		1.9	1.9	1.00	1.00		1.9	0.0	
		11th Street	11th Street: ASCT, Add eastbound left turn lane, add receiving lane along northbound SR 303	13.3	13.3	0.83	1.00	#6856 (Install adaptive traffic signal control)	11.0	-2.3		4.9	4.9	0.92	1.00	#6857 (Install adaptive traffic signal control)	4.5	-0.4	
			receiving lane	2.9	2.9	1.00	1.00		2.9	0.0		0.9	0.9	1.00	1.00		0.9	0.0	
		13th Street	ASCT	15.9	15.9	0.83	1.00	#6856 (Install adaptive traffic signal control)	13.2	-2.7		6.0	6.0	0.92	1.00	#6857 (Install adaptive traffic signal control)	5.5	-0.5	
				6.0	6.0	1.00	1.00		6.0	0.0		2.0	2.0	1.00	1.00		2.0	0.0	
		16th Street	ASCT	8.4	8.4	0.83	1.00	#6856 (Install adaptive traffic signal control)	7.0	-1.4		2.7	2.7	0.92	1.00	#6857 (Install adaptive traffic signal control)	2.5	-0.2	
TOTAL				64.8					55.2	-9.6	-10	22.8					20.8	-2.0	-2
1	Multi-modal	Burwell (SR 304)	Burwell Street: SBL transit turn lane and TSP	5.4	5.5	0.87	1.00	#9664 (Implement TSP)	4.8	-0.6		1.9	1.9	0.95	1.00	#9820 (Implement TSP)	1.8	-0.1	
			remove center islands and replace with ped crossings and c-curb, relocate utilities	1.3	1.2	1.00	1.00		1.2	-0.1		0.4	0.4	1.00	1.00		0.4	0.0	
		6th Street	TSP	5.9	5.9	0.87	1.00	#9664 (Implement TSP)	5.1	-0.8		2.1	2.1	0.95	1.00	#9820 (Implement TSP)	2.0	-0.1	
			two lanes with TWLTL, new ped crossing, new bus stops, relocate utilities	5.7	5.0	0.80	1.00	#2341 (Install TWLTL)	4.0	-1.7		1.9	1.7	0.74	1.00	#2346 (Install TWLTL)	1.3	-0.6	
		11th Street	TSP	13.3	13.4	0.87	1.00	#9664 (Implement TSP)	11.7	-1.6		4.9	5.0	0.95	1.00	#9820 (Implement TSP)	4.8	-0.2	
			relocate bus stops, relocate utilities	2.9	2.8	1.00	1.00		2.8	-0.1		0.9	0.9	1.00	1.00		0.9	0.0	
		13th Street	TSP	15.9	15.9	0.87	1.00	#9664 (Implement TSP)	13.8	-2.1		6.0	6.0	0.95	1.00	#9820 (Implement TSP)	5.7	-0.3	
			relocate bus stops, relocate utilities	6.0	6.0	1.00	1.00		6.0	0.0		2.0	2.0	1.00	1.00		2.0	0.0	
		16th Street	TSP	8.4	8.4	0.87	1.00	#9664 (Implement TSP)	7.3	-1.1		2.7	2.7	0.95	1.00	#9820 (Implement TSP)	2.6	-0.1	
TOTAL				64.8					56.7	-8.1	-8	22.8					21.4	-1.4	-1

Segment	Alternative	Intersection	Improvement Description	Safety															
				Total Crash Frequency								Crash Severity							
				No Build Crash Rate (KABCO)	HSM Rate	CMF 1	CMF 2	Notes	Build Crash Rate	Change	Rounded	No Build Crash Rate (KABC)	HSM Rate	CMF 1	CMF 2	Notes	Build Crash Rate (KABC)	Change	Rounded
1	Boulevard	Burwell (SR 304)	Burwell Street: Roundabout	5.4	5.4	1.00	1.00	#4252 (Sig to RAB) - use 1.0 for AADT>18,000	5.4	0.0		1.9	1.9	0.34	1.00	#4253 (Sig to RAB)	0.6	-1.3	
			underground utilities	1.3	1.0	1.00	1.00		1.0	-0.3		0.4	0.3	1.00	1.00		0.3	-0.1	
		6th Street	TSP	5.9	5.9	0.87	1.00	#9664 (Implement TSP)	5.1	-0.8		2.1	2.1	0.95	1.00	#9820 (Implement TSP)	2.0	-0.1	
			new ped crossing, underground utilities	5.7	3.9	1.00	1.00	New ped crossing??	3.9	-1.8		1.9	1.3	1.00	1.00	New ped crossing??	1.3	-0.6	
		11th Street	TSP	13.3	13.3	0.87	1.00	#9664 (Implement TSP)	11.6	-1.7		4.9	4.9	0.95	1.00	#9820 (Implement TSP)	4.7	-0.2	
			underground utilities	2.9	2.4	1.00	1.00		2.4	-0.5		0.9	0.7	1.00	1.00		0.7	-0.2	
		13th Street	TSP	15.9	15.9	0.87	1.00	#9664 (Implement TSP)	13.8	-2.1		6.0	6.0	0.95	1.00	#9820 (Implement TSP)	5.7	-0.3	
			underground utilities	6.0	5.3	1.00	1.00		5.3	-0.7		2.0	1.7	1.00	1.00		1.7	-0.3	
		16th Street	TSP	8.4	8.4	0.87	1.00	#9664 (Implement TSP)	7.3	-1.1		2.7	2.7	0.95	1.00	#9820 (Implement TSP)	2.6	-0.1	
TOTAL				64.8					55.8	-9.0	-9	22.8					19.6	-3.2	-3
2	No Build			10.4		1.00	1.00		10.4	0.0		2.8		1.00	1.00		2.8	0.0	
		Callahan Drive		7.4		1.00	1.00	No Build calculated for NB and SB on-ramps, Callahan Dr ints	7.4	0.0		2.7		1.00	1.00	No Build calculated for NB and SB on-ramps, Callahan Dr ints	2.7	0.0	
				3.0		1.00	1.00		3.0	0.0		0.9		1.00	1.00		0.9	0.0	
		Sheridan Road		8.3		1.00	1.00		8.3	0.0		3.1		1.00	1.00		3.1	0.0	
TOTAL				29.1					29.1	0.0	0	9.5					9.5	0.0	0
2	Traffic Management			10.4	10.4	1.00	1.00		10.4	0.0		2.8	2.8	1.00	1.00		2.8	0.0	
		Callahan Drive		7.4	7.4	1.00	1.00		7.4	0.0		2.7	2.7	1.00	1.00		2.7	0.0	
				3.0	3.0	1.00	1.00		3.0	0.0		0.9	0.9	1.00	1.00		0.9	0.0	
		Sheridan Road	Sheridan Road: ASCT, Remove EB/WB split phase, convert westbound thru-left lane to thru only	8.3	9.2	0.83	1.00	#6856 (Install adaptive traffic signal control)	7.6	-0.7		3.1	3.4	0.92	1.00	#6857 (Install adaptive traffic signal control)	3.1	0.0	
TOTAL				29.1					28.4	-0.7	-1	9.5					9.5	0.0	0
2	Multi-modal		widen and complete sidewalks, relocate utilities	10.4	10.8	0.89	1.00	#2375 (Install curb and gutter)	9.6	-0.8		2.8	2.9	1.00	1.00		2.9	0.1	
		Callahan Drive	Callahan Drive: convert interchange to signal control (with TSP)	7.4	8.9	0.87	1.00	#9664 (Implement TSP)	7.7	0.3		2.7	3.3	1.00	1.00	#9820 (Implement TSP)	3.3	0.6	
			widen and complete sidewalks, relocate utilities	3.0	2.9	0.89	1.00	#2375 (Install curb and gutter)	2.6	-0.4		0.9	0.8	1.00	1.00		0.8	-0.1	
		Sheridan Road	TSP with BAT lane	8.3	8.4	0.87	1.00	#9664 (Implement TSP)	7.3	-1.0		3.1	3.2	0.95	1.00	#9820 (Implement TSP)	3.0	-0.1	
TOTAL				29.1					27.2	-1.9	-2	9.5					10.0	0.5	1
2	Boulevard		widen and complete sidewalks, median, remove northbound add lane at 17th, underground utilities	10.4	10.3	0.89	0.80	#2375 (Install curb and gutter) #351 (RIRO)	7.3	-3.1		2.8	2.9	0.64	1.00	#353 (RIRO)	1.9	-0.9	
		Callahan Drive	Callahan Drive: Roundabout	7.4	8.9	1.00	1.00	#4252 (Sig to RAB) - use 1.0 for AADT>18,000	8.9	1.5		2.7	3.3	0.34	1.00	#4253 (Sig to RAB)	1.1	-1.6	
			widen and complete sidewalks, median, underground utilities	3.0	2.9	0.89	0.80	#2375 (Install curb and gutter) #351 (RIRO)	2.1	-0.9		0.9	0.8	0.64	1.00	#353 (RIRO)	0.5	-0.4	
		Sheridan Road	Sheridan Road: Roundabout	8.3	8.4	1.00	1.00	#4252 (Sig to RAB) - use 1.0 for AADT>18,000	8.4	0.1		3.1	3.2	0.34	1.00	#4253 (Sig to RAB)	1.1	-2.0	
TOTAL				29.1					26.7	-2.4	-2	9.5					4.6	-4.9	-5

Segment	Alternative	Intersection	Improvement Description	Safety															
				Total Crash Frequency								Crash Severity							
				No Build Crash Rate (KABCO)	HSM Rate	CMF 1	CMF 2	Notes	Build Crash Rate	Change	Rounded	No Build Crash Rate (KABC)	HSM Rate	CMF 1	CMF 2	Notes	Build Crash Rate (KABC)	Change	Rounded
3	No Build			21.4		1.00	1.00		21.4	0.0		6.7		1.00	1.00		6.7	0.0	
		Sylvan Road		8.1		1.00	1.00		8.1	0.0		3.1		1.00	1.00		3.1	0.0	
				20.7		1.00	1.00		20.7	0.0		6.5		1.00	1.00		6.5	0.0	
		E Broad Street		7.8		1.00	1.00		7.8	0.0		2.9		1.00	1.00		2.9	0.0	
				5.0		1.00	1.00		5.0	0.0		1.6		1.00	1.00		1.6	0.0	
		Hollis Street		4.5		1.00	1.00		4.5	0.0		1.6		1.00	1.00		1.6	0.0	
				13.4		1.00	1.00		13.4	0.0		4.2		1.00	1.00		4.2	0.0	
		NE Riddell Road		7.3		1.00	1.00		7.3	0.0		2.7		1.00	1.00		2.7	0.0	
TOTAL				88.2					88.2	0.0	0	29.3					29.3	0.0	0
3	Traffic Management			21.4	21.4	1.00	1.00		21.4	0.0		6.7	6.7	1.00	1.00		6.7	0.0	
		Sylvan Road	ASCT	8.1	8.1	0.83	1.00	#6856 (Install adaptive traffic signal control)	6.7	-1.4		3.1	3.1	0.92	1.00	#6857 (Install adaptive traffic signal control)	2.9	-0.2	
				20.7	20.7	1.00	1.00		20.7	0.0		6.5	6.5	1.00	1.00		6.5	0.0	
		E Broad Street	ASCT	7.8	7.8	0.83	1.00	#6856 (Install adaptive traffic signal control)	6.5	-1.3		2.9	2.9	0.92	1.00	#6857 (Install adaptive traffic signal control)	2.7	-0.2	
				5.0	5.0	1.00	1.00		5.0	0.0		1.6	1.6	1.00	1.00		1.6	0.0	
		Hollis Street	ASCT	4.5	4.5	0.83	1.00	#6856 (Install adaptive traffic signal control)	3.7	-0.8		1.6	1.6	0.92	1.00	#6857 (Install adaptive traffic signal control)	1.5	-0.1	
				13.4	13.4	1.00	1.00		13.4	0.0		4.2	4.2	1.00	1.00		4.2	0.0	
		NE Riddell Road	NE Riddell Road: ASCT, add southbound left turn lane, add receiving lane along eastbound NE Riddell	7.3	7.3	0.83	1.00	#6856 (Install adaptive traffic signal control)	6.1	-1.2		2.7	2.7	0.92	1.00	#6857 (Install adaptive traffic signal control)	2.5	-0.2	
TOTAL				88.2					83.5	-4.7	-5	29.3					28.5	-0.8	-1
3	Multi-modal		BAT lane, new ped crossing at Dibb, relocate bus stops, widen sidewalks, relocate utilities	21.4	10.1	1.00	1.00	New ped crossing?	10.1	-11.3		6.7	3.2	1.00	1.00	New ped crossing?	3.2	-3.5	
		Sylvan Road	TSP with BAT lane	8.1	8.9	0.87	1.00	#9664 (Implement TSP)	7.7	-0.4		3.1	3.4	0.95	1.00	#9820 (Implement TSP)	3.2	0.1	
			BAT lane, relocate bus stops, new bus pullout, widen sidewalks, relocate utilities	20.7	8.6	1.00	1.00		8.6	-12.1		6.5	2.7	1.00	1.00		2.7	-3.8	
		E Broad Street	TSP with BAT lane	7.8	8.4	0.87	1.00	#9664 (Implement TSP)	7.3	-0.5		2.9	3.2	0.95	1.00	#9820 (Implement TSP)	3.0	0.1	
			widen sidewalks, relocate utilities	5.0	2.7	1.00	1.00		2.7	-2.3		1.6	0.9	1.00	1.00		0.9	-0.7	
		Hollis Street	TSP	4.5	4.9	0.87	1.00	#9664 (Implement TSP)	4.3	-0.2		1.6	1.7	0.95	1.00	#9820 (Implement TSP)	1.6	0.0	
			relocate bus stops, widen sidewalks, relocate utilities	13.4	13.1	1.00	1.00		13.1	-0.3		4.2	4.1	1.00	1.00		4.1	-0.1	
		NE Riddell Road	TSP	7.3	7.3	0.87	1.00	#9664 (Implement TSP)	6.4	-0.9		2.7	2.7	0.95	1.00	#9820 (Implement TSP)	2.6	-0.1	
TOTAL				88.2					60.2	-28.0	-28	29.3					21.4	-8.0	-8

Segment	Alternative	Intersection	Improvement Description	Safety															
				Total Crash Frequency								Crash Severity							
				No Build Crash Rate (KABCO)	HSM Rate	CMF 1	CMF 2	Notes	Build Crash Rate	Change	Rounded	No Build Crash Rate (KABC)	HSM Rate	CMF 1	CMF 2	Notes	Build Crash Rate (KABC)	Change	Rounded
3	Boulevard		new ped crossing at Dibb, median, widen sidewalks, underground utilities	21.4	9.0	0.80	1.00	#351 (RIRO)	7.2	-14.2		6.7	2.8	0.64	1.00	#353 (RIRO)	1.8	-4.9	
		Sylvan Road	Sylvan Way: Roundabout	8.1	8.4	1.00	1.00	#4252 (Sig to RAB) - use 1.0 for AADT>18,000	8.4	0.3		3.1	3.4	0.34	1.00	#4253 (Sig to RAB)	1.2	-1.9	
			median, widen sidewalks, underground utilities	20.7	7.4	0.80	1.00	#351 (RIRO)	5.9	-14.8		6.5	2.4	0.64	1.00	#353 (RIRO)	1.5	-5.0	
		E Broad Street	E Broad Street: Roundabout	7.8	8.9	1.00	1.00	#4252 (Sig to RAB) - use 1.0 for AADT>18,000	8.9	1.1		2.9	3.2	0.34	1.00	#4253 (Sig to RAB)	1.1	-1.8	
			median, widen sidewalks, underground utilities	5.0	2.2	0.80	1.00	#351 (RIRO)	1.8	-3.2		1.6	0.7	0.64	1.00	#353 (RIRO)	0.4	-1.2	
		Hollis Street	Hollis Street: Roundabout	4.5	4.7	1.00	1.00	#4252 (Sig to RAB) - use 1.0 for AADT>18,000	4.7	0.2		1.6	1.6	0.34	1.00	#4253 (Sig to RAB)	0.5	-1.1	
			median, widen sidewalks, underground utilities	13.4	5.0	0.80	1.00	#351 (RIRO)	4.0	-9.4		4.2	1.6	0.64	1.00	#353 (RIRO)	1.0	-3.2	
		NE Riddell Road	NE Riddell Road: Roundabout	7.3	7.5	1.00	1.00	#4252 (Sig to RAB) - use 1.0 for AADT>18,000	7.5	0.2		2.7	2.8	0.34	1.00	#4253 (Sig to RAB)	1.0	-1.7	
TOTAL				88.2					48.4	-39.8	-40	29.3					8.5	-20.8	-21
4	No Build			9.2		1.00	1.00		9.2	0.0		2.9		1.00	1.00		2.9	0.0	
		NE Furneys Lane		7.8		1.00	1.00		7.8	0.0		2.9		1.00	1.00		2.9	0.0	
				8.2		1.00	1.00		8.2	0.0		2.3		1.00	1.00		2.3	0.0	
		NE Fuson Road		7.8		1.00	1.00		7.8	0.0		2.9		1.00	1.00		2.9	0.0	
				14.0		1.00	1.00		14.0	0.0		3.9		1.00	1.00		3.9	0.0	
		NE McWilliams Road		7.5		1.00	1.00		7.5	0.0		2.9		1.00	1.00		2.9	0.0	
TOTAL				54.5					54.5	0.0	0	17.8					17.8	0.0	0
4	Traffic Management			9.2	9.2	1.00	1.00		9.2	0.0		2.9	2.9	1.00	1.00		2.9	0.0	
		NE Furneys Lane	ASCT	7.8	7.8	0.83	1.00	#6856 (Install adaptive traffic signal control)	6.5	-1.3		2.9	2.9	0.92	1.00	#6857 (Install adaptive traffic signal control)	2.7	-0.2	
				8.2	8.2	1.00	1.00		8.2	0.0		2.3	2.3	1.00	1.00		2.3	0.0	
		NE Fuson Road	ASCT	7.8	7.8	0.83	1.00	#6856 (Install adaptive traffic signal control)	6.5	-1.3		2.9	2.9	0.92	1.00	#6857 (Install adaptive traffic signal control)	2.7	-0.2	
				14.0	14.0	1.00	1.00		14.0	0.0		3.9	3.9	1.00	1.00		3.9	0.0	
		NE McWilliams Road	ASCT	7.5	7.5	0.83	1.00	#6856 (Install adaptive traffic signal control)	6.2	-1.3		2.9	2.9	0.92	1.00	#6857 (Install adaptive traffic signal control)	2.7	-0.2	
TOTAL				54.5					50.6	-3.9	-4	17.8					17.1	-0.7	-1

Segment	Alternative	Intersection	Improvement Description	Safety															
				Total Crash Frequency								Crash Severity							
				No Build Crash Rate (KABCO)	HSM Rate	CMF 1	CMF 2	Notes	Build Crash Rate	Change	Rounded	No Build Crash Rate (KABC)	HSM Rate	CMF 1	CMF 2	Notes	Build Crash Rate (KABC)	Change	Rounded
4	Multi-modal		relocate bus stops, widen and complete sidewalks (add curb), relocate utilities	9.2	9.0	0.89	1.00	#2375 (Install curb and gutter)	8.0	-1.2		2.9	2.8	1.00	1.00		2.8	-0.1	
		NE Furneys Lane	TSP	7.8	7.8	0.87	1.00	#9664 (Implement TSP)	6.8	-1.0		2.9	2.9	0.95	1.00	#9820 (Implement TSP)	2.8	-0.1	
			widen and complete sidewalks (add curb), relocate utilities	8.2	8.1	0.89	1.00	#2375 (Install curb and gutter)	7.2	-1.0		2.3	2.3	1.00	1.00		2.3	0.0	
		NE Fuson Road	TSP	7.8	7.8	0.87	1.00	#9664 (Implement TSP)	6.8	-1.0		2.9	2.9	0.95	1.00	#9820 (Implement TSP)	2.8	-0.1	
			widen and complete sidewalks (add curb), relocate utilities	14.0	13.9	0.89	1.00	#2375 (Install curb and gutter)	12.4	-1.6		3.9	3.9	1.00	1.00		3.9	0.0	
		NE McWilliams Road	TSP	7.5	7.5	0.87	1.00	#9664 (Implement TSP)	6.5	-1.0		2.9	2.9	0.95	1.00	#9820 (Implement TSP)	2.8	-0.1	
TOTAL				54.5					47.7	-6.8	-7	17.8					17.3	-0.5	-1
4	Boulevard		median, widen and complete sidewalks (add curb), underground utilities	9.2	3.7	0.89	0.80	#2375 (Install curb and gutter) #351 (RIRO)	2.6	-6.6		2.9	1.2	0.64	1.00	#353 (RIRO)	0.8	-2.1	
		NE Furneys Lane	TSP	7.8	8.0	0.87	1.00	#9664 (Implement TSP)	7.0	-0.8		2.9	3.0	0.95	1.00	#9820 (Implement TSP)	2.9	-0.1	
			median, widen and complete sidewalks (add curb), underground utilities	8.2	3.7	0.89	0.80	#2375 (Install curb and gutter) #351 (RIRO)	2.6	-5.6		2.3	1.0	0.64	1.00	#353 (RIRO)	0.6	-1.7	
		NE Fuson Road	TSP	7.8	7.9	0.87	1.00	#9664 (Implement TSP)	6.9	-0.9		2.9	3.0	0.95	1.00	#9820 (Implement TSP)	2.9	-0.1	
			median, widen and complete sidewalks (add curb), underground utilities	14.0	6.7	0.89	0.80	#2375 (Install curb and gutter) #351 (RIRO)	4.8	-9.2		3.9	1.8	0.64	1.00	#353 (RIRO)	1.2	-2.7	
		NE McWilliams Road	NE McWilliams Road: Roundabout	7.5	7.6	1.00	1.00	#4252 (Sig to RAB) - use 1.0 for AADT>18,000	7.6	0.1		2.9	2.9	0.34	1.00	#4253 (Sig to RAB)	1.0	-1.9	
TOTAL				54.5					31.5	-23.0	-23	17.8					9.2	-8.6	-9

Segment	Alternative	ID #	Improvement Description	Non-Motorized						
				Gaps		Obstructions			Walkability	
				Reduction in NB/SB Gap (ft)	Notes	Reduction in # of Obstructions	Notes	Rounded	Change in # of crossings across SR 303	Notes
1	No Build		No Build	0		0			0	
TOTAL				0		0		0	0	
1	Traffic Management	TM-1	Full Corridor: Adapative Signal Control or Green Wave Signal Control	0		0			0	
		TM-2	Full Corridor: Install ped lighting	0		0			0	
		TM-3	Full Corridor: Improve wayfinding and placemaking	0		0			0	
		TM-4	Burwell Street: Remove NB Phase, move east pedestrian crossing to west, and convert parking lot entrance to RIRO	0		0			0	No change in north leg
		TM-5	6th Street: Remove EB/WB split phase and provide concurrent lefts	0		0			0	
		TM-6	11th Street: Add eastbound left turn lane, add receiving lane along northbound SR 303	0		-6	add lane between 11th/13th		0	
TOTAL				0		-6		-10	0	
1	Multi-modal	MM-1	Full Corridor: Transit Signal Priority	0		0			0	
		MM-2	Full Corridor: Relocate obstructions to back of sidewalk	0		-40	utility poles, guy wires		0	
		MM-3	Full Corridor: Install ped lighting	0		0			0	
		MM-4	Full Corridor: Improve wayfinding and placemaking	0		0			0	
		MM-6	Burwell Street: Add SBL transit turn lane and TSP	0		-1			0	
		MM-7	Burwell to 5th: Remove center islands and replace with c-curb	0		0			0	
		MM-8	6th to 11th: Add TWLTL	0		-5			0	
		MM-9	6th to 11th: Reduce gaps in transit stops	0		0			0	
		MM-10	6th to 11th: Install new pedestrian crossing with ped button	0		0			1	1 new crossing
		MM-11	13th to 16th: Relocate bus stops to intersections	0		0			0	
TOTAL				0		-46		-50	1	
1	Boulevard	B-1	Full Corridor: Transit Signal Priority	0		0			0	
		B-2	Full Corridor: Underground utilities	0		-40	utility poles, guy wires		0	
		B-3	Full Corridor: Install ped lighting	0		0			0	
		B-4	Full Corridor: Improve wayfinding and placemaking	0		0			0	
		B-7	Burwell Street: Convert signal to roundabout, close access to parking lot	0		0			0	No change across SR303
		B-8	6th to 11th: Install new pedestrian crossing with ped button	0		0			1	1 new crossing
TOTAL				0		-40		-40	1	

Segment	Alternative	ID #	Improvement Description	Non-Motorized						
				Gaps		Obstructions			Walkability	
				Reduction in NB/SB Gap (ft)	Notes	Reduction in # of Obstructions	Notes	Rounded	Change in # of crossings across SR 303	Notes
2	No Build		No Build	0		0			0	
TOTAL				0		0		0	0	
2	Traffic Management	TM-1	Full Corridor: Adapative Signal Control or Green Wave Signal Control	0		0			0	
		TM-2	Full Corridor: Install ped lighting	0		0			0	
		TM-3	Full Corridor: Improve wayfinding and placemaking	0		0			0	
		TM-7	Warren Ave Bridge: Improve non-motorized connection off of Warren Ave Bridge to 18th	-50		0			0	No change across SR303
		TM-8	Warren Ave Bridge: Install cycle track on both sides	0		0			0	No change across SR303
		TM-9	Warren Ave Bridge: Improve wayfinding for cycles	0		0			0	
		TM-10	Callahan Drive: Install shared-use path along tunnel undercrossing	0		0			1	1 new crossing
		TM-11	Callahan to Fuson: Complete bicycle connection to Almira Dr	0	No change along SR303	0			0	
		TM-12	Sheridan Road: Remove EB/WB split phase and replace with protected/permitted, convert westbound thru-left lane to thru only	0		0			0	
TOTAL				-50		0		0	1	
2	Multi-modal	MM-1	Full Corridor: Transit Signal Priority	0		0			0	
		MM-2	Full Corridor: Relocate obstructions to back of sidewalk	0		-1	utility poles, guy wires		0	
		MM-3	Full Corridor: Install ped lighting	0		0			0	
		MM-4	Full Corridor: Improve wayfinding and placemaking	0		0			0	
		MM-12	18th Street: Install shared-use path along new tunnel undercrossing	0		0			0	
		MM-13	Warren Ave Bridge: Improve non-motorized connection off of Warren Ave Bridge to 18th	-50		0			0	No change across SR303
		MM-14	Warren Ave Bridge: Install cycle track on west side	0		0			0	No change across SR303
		MM-15	Warren Ave Bridge: Improve wayfinding for cycles	0		0			0	
		MM-16	Warren Ave Bridge: Install viewpoint	0		0			0	
		MM-17	Warren Ave Bridge: Install safety call boxes and/or beacon	0		0			0	
		MM-18	Warren Ave Bridge: Install high railings to limit ability to throw items off of bridge; add call box for help	0		0			0	
		MM-19	Warren Ave Bridge: Widen sidewalks along east side and include barriers	0		0			0	
		MM-20	Callahan Drive: Widen and complete sidewalks near intersection	-1,650		-11	remove sidewalk obstructions		0	
		MM-21	Callahan Drive: Convert interchange to signal control	0		0			2	2 new legs
		MM-22	Callahan Drive: Install shared-use path along tunnel undercrossing	0	No change along SR303	0			1	1 new crossing
		MM-23	Callahan to Fuson: Complete bicycle connection to Almira Dr	0	No change along SR303	0			0	
TOTAL				1,700		-12		-10	3	

Segment	Alternative	ID #	Improvement Description	Non-Motorized								
				Gaps		Obstructions			Walkability			
				Reduction in NB/SB Gap (ft)	Notes	Reduction in # of Obstructions	Notes	Rounded	Change in # of crossings across SR 303	Notes		
2	Boulevard	B-1	Full Corridor: Transit Signal Priority	0		0			0			
		B-2	Full Corridor: Underground utilities	0		-1	utility poles, guy wires		0			
		B-3	Full Corridor: Install ped lighting	0		0			0			
		B-4	Full Corridor: Improve wayfinding and placemaking	0		0			0			
		B-9	17th Street: Remove northbound add lane and require a t-intersection for right turns	0		0			0			
		B-10	Warren Ave Bridge: Improve non-motorized connection off of Warren Ave Bridge to 18th	-50		0			0	No change across SR303		
		B-11	Warren Ave Bridge: Install cycle track on both sides	0		0			0	No change across SR303		
		B-12	Warren Ave Bridge: Improve wayfinding for cycles	0		0			0			
		B-13	Warren Ave Bridge: Install viewpoint	0		0			0			
		B-14	Warren Ave Bridge: Install safety call boxes and/or beacon	0		0			0			
		B-15	Warren Ave Bridge: Install high railings to limit ability to throw items off of bridge; add call box for help	0		0			0			
		B-16	Callahan Drive: Widen and complete sidewalks near intersection	-1,650		-11	remove sidewalk obstructions		0			
		B-17	Callahan Drive: Convert interchange to roundabout	0		0			2	2 new legs		
		B-18	Callahan Drive: Install shared-use path along tunnel undercrossing	0	No change along SR303	0			1	1 new crossing		
		B-19	Callahan to Fuson: Complete bicycle connection to Almira Dr	0	No change along SR303	0			0			
		B-20	Callahan to Sheridan: median control	0		0			0			
		B-21	Sheridan Road: Convert signal to roundabout	0		-1	remove signals		0			
		TOTAL				-1,700		-13		-10	3	
3	No Build		No Build	0		0			0			
TOTAL				0		0		0	0			
3	Traffic Management	TM-1	Full Corridor: Adapative Signal Control or Green Wave Signal Control	0		0			0			
		TM-2	Full Corridor: Install ped lighting	0		0			0			
		TM-3	Full Corridor: Improve wayfinding and placemaking	0		0			0			
		TM-13	NE Riddell Road: Add southbound left turn lane, add receiving lane along eastbound NE Riddell	0		0			0			
TOTAL				0		0		0	0			

Segment	Alternative	ID #	Improvement Description	Non-Motorized						
				Gaps		Obstructions			Walkability	
				Reduction in NB/SB Gap (ft)	Notes	Reduction in # of Obstructions	Notes	Rounded	Change in # of crossings across SR 303	Notes
3	Multi-modal	MM-1	Full Corridor: Transit Signal Priority	0		0			0	
		MM-2	Full Corridor: Relocate obstructions to back of sidewalk	0		-12	utility poles, guy wires		0	
		MM-3	Full Corridor: Install ped lighting	0		0			0	
		MM-4	Full Corridor: Improve wayfinding and placemaking	0		0			0	
		MM-5	North End: Widen sidewalks to 10' on east and west side	0		-10	remove all but signals		0	
		MM-24	Sheridan to Hollis: Add northbound BAT lane (SUB-OPTIONS)	0		0			0	
		MM-25	Sheridan to Sylvan: Improve pedestrian connectivity from neighborhoods to transit	0	No change along SR303	0			0	No change across SR3030
		MM-26	Dibb Street: Install new ped crossing with ped button	0		0			2	2 new crossings
		MM-27	Sylvan Way: Relocate bus stops to intersection	0		0			0	
		MM-28	Sylvan to NE Riddell: Improve pedestrian connectivity from neighborhoods to transit	0	No change along SR303	0			0	No change across SR3030
		MM-29	E Broad Street: Install bus pullout across from new transit center	0		0			0	
		MM-30	E Broad Street: Improve pedestrian connectivity from neighborhoods to Wheaton Way TC	0	No change along SR303	0			0	No change across SR3030
		MM-31	Hollis Street: Install northbound u-turn	0		0			0	
		MM-32	NE Riddell Road: Relocate bus stops to intersection	0		0			0	
TOTAL				0		-22		-20	2	
3	Boulevard	B-1	Full Corridor: Transit Signal Priority	0		0			0	
		B-2	Full Corridor: Underground utilities	0		-12	utility poles, guy wires		0	
		B-3	Full Corridor: Install ped lighting	0		0			0	
		B-4	Full Corridor: Improve wayfinding and placemaking	0		0			0	
		B-5	North End: Widen sidewalks to 10' on east and west side	0		-10	remove all but signals		0	
		B-6	North End: Median control along blocks	0		0			0	
		B-22	Sheridan to Sylvan: Improve pedestrian connectivity from neighborhoods to transit	0	No change along SR303	0			0	No change across SR3030
		B-23	Dibb Street: Install new ped crossing with ped button	0		0			2	2 new crossings
		B-24	Sylvan Way: Convert signal to roundabout	0		-2	remove signals		0	
		B-25	Sylvan to NE Riddell: Improve pedestrian connectivity from neighborhoods to transit	0	No change along SR303	0			0	No change across SR3030
		B-26	E Broad Street: Convert signal to roundabout	0		0			1	1 new crossing on south leg
		B-27	E Broad Street: Improve pedestrian connectivity from neighborhoods to Wheaton Way TC	0	No change along SR303	0			0	No change across SR3030
		B-28	Hollis Street: Convert signal to roundabout	0		-1	remove signals		1	1 new crossing on south leg
		B-29	NE Riddell Road: Convert signal to roundabout	0		0			0	
TOTAL				0		-25		-30	4	

Segment	Alternative	ID #	Improvement Description	Non-Motorized						
				Gaps		Obstructions			Walkability	
				Reduction in NB/SB Gap (ft)	Notes	Reduction in # of Obstructions	Notes	Rounded	Change in # of crossings across SR 303	Notes
4	No Build		No Build	0		0			0	
TOTAL				0		0		0	0	
4	Traffic Management	TM-1	Full Corridor: Adapative Signal Control or Green Wave Signal Control	0		0			0	
		TM-2	Full Corridor: Install ped lighting	0		0			0	
		TM-3	Full Corridor: Improve wayfinding and placemaking	0		0			0	
		TM-14	Designate Almira Dr and NE Fuson Rd as bicycle routes	0		0			0	
TOTAL				0		0		0	0	
4	Multi-modal	MM-1	Full Corridor: Transit Signal Priority	0		0			0	
		MM-2	Full Corridor: Relocate obstructions to back of sidewalk	0		0			0	
		MM-3	Full Corridor: Install ped lighting	0		0			0	
		MM-4	Full Corridor: Improve wayfinding and placemaking	0		0			0	
		MM-5	North End: Widen sidewalks to 10' on east and west side	0		-1	remove all but signals		0	
		MM-33	Riddell to McWilliams: Complete sidewalks on east and west sides	-5,000		0			0	
		MM-34	Designate Almira Dr and NE Fuson Rd as bicycle routes	0		0			0	
		MM-35	Designate Pine Rd NE as bicycle route	0		0			0	
TOTAL				-5,000		-1		0	0	
4	Boulevard	B-1	Full Corridor: Transit Signal Priority	0		0			0	
		B-2	Full Corridor: Underground utilities	0		0			0	
		B-3	Full Corridor: Install ped lighting	0		0			0	
		B-4	Full Corridor: Improve wayfinding and placemaking	0		0			0	
		B-5	North End: Widen sidewalks to 10' on east and west side	0		-1	remove all but signals		0	
		B-6	North End: Median control along blocks	0		0			0	
		B-30	Riddell to McWilliams: Complete sidewalks on east and west sides	-5,000		0			0	
		B-31	NE McWilliams Road: Convert signal to roundabout	0		0			0	
		B-32	NE Furneys Ln: install northbound and southbound u-turns	0		0			0	
		B-33	NE Fuson Rd: install northbound and southbound u-turns	0		0			0	
		B-34	Designate Almira Dr and NE Fuson Rd as bicycle routes	0		0			0	
		B-35	Designate Pine Rd NE as bicycle route	0		0			0	
TOTAL				-5,000		-1		0	0	

Segment	Alternative	Intersection	Improvement Description	Traffic Operations						Transit					
				Segment Delay (GP)						Transit Delay					
				No Build Travel Time (s)	Ops Travel Time (s)	Build Travel Time (s)	Rounded	Change in Travel Time (s)	Rounded	No Build Transit Travel Time (s)	Ops Transit Travel Time (s)	Build Transit Travel Time (s)	Rounded	Change in Travel Time (s)	Rounded
1	No Build	Burwell (SR 304)		85		85		0		85		85		0	
				22		22		0		52		52		0	
		6th Street		25		25		0		25		25		0	
				33		33		0		33		33		0	
		11th Street		118		118		0		118		118		0	
				17		17		0		17		17		0	
		13th Street		67		67		0		67		67		0	
				26		26		0		56		56		0	
		16th Street		9		9		0		9		9		0	
TOTAL				402		402	400	0	0	462		462	460	0	0
1	Traffic Management	Burwell (SR 304)	Burwell Street: ASCT, Remove NB Phase, move east pedestrian crossing and convert parking lot entrance to RIRO	85	55	50		-36		85		50		-36	
				22		22		0		52		52		0	
		6th Street	6th Street: ASCT, Remove EB/WB split phase and provide concurrent lefts	25	24	22		-3		25		22		-3	
				33		33		0		33		33		0	
		11th Street	11th Street: ASCT, Add eastbound left turn lane, add receiving lane along northbound SR 303	118	70	63		-55		118		63		-55	
			receiving lane	17		17		0		17		17		0	
		13th Street	ASCT	67	86	77		10		67		77		10	
				26		26		0		56		56		0	
		16th Street	ASCT	9	11	10		1		9		10		1	
TOTAL				402		319	320	-83	-80	462		379	380	-83	-80
1	Multi-modal	Burwell (SR 304)	Burwell Street: SBL transit turn lane and TSP	85	75	69		-16		85		69		-16	
			remove center islands, replace with clearly marked ped crossings and c-curb	22		22		0		52		52		0	
		6th Street	TSP	25	23	21		-4		25		21		-4	
			two lanes with TWLTL, new ped crossing, new bus stop	33		33		0		33		63		30	
		11th Street	TSP	118	122	112		-6		118		112		-6	
				17		17		0		17		17		0	
		13th Street	TSP	67	67	62		-5		67		62		-5	
				26		26		0		56		56		0	
		16th Street	TSP	9	9	8		-1		9		8		-1	
TOTAL				402		370	370	-32	-30	462		460	460	-2	0

Segment	Alternative	Intersection	Improvement Description	Traffic Operations						Transit					
				Segment Delay (GP)						Transit Delay					
				No Build Travel Time (s)	Ops Travel Time (s)	Build Travel Time (s)	Rounded	Change in Travel Time (s)	Rounded	No Build Transit Travel Time (s)	Ops Transit Travel Time (s)	Build Transit Travel Time (s)	Rounded	Change in Travel Time (s)	Rounded
1	Boulevard	Burwell (SR 304)	Burwell Street: Roundabout, close access to parking lot	85	9	9		-76		85		9		-76	
				22		22		0		52		52		0	
		6th Street	TSP	25	46	42		17		25		42		17	
			new ped crossing	33		33		0		33		33		0	
		11th Street	TSP	118	114	105		-13		118		105		-13	
				17		17		0		17		17		0	
		13th Street	TSP	67	67	62		-5		67		62		-5	
				26		26		0		56		56		0	
		16th Street	TSP	9	9	8		-1		9		8		-1	
TOTAL				402		324	320	-78	-80	462		384	380	-78	-80
2	No Build			75		75		0		75		75		0	
		Callahan Drive		0		0		0		0		0		0	
				24		24		0		24		24		0	
		Sheridan Road		93		93		0		93		93		0	
TOTAL				192		192	190	0	0	192		192	190	0	0
2	Traffic Management			75		75		0		75		75		0	
		Callahan Drive		0		0		0		0		0		0	
				24		24		0		24		24		0	
		Sheridan Road	Sheridan Road: ASCT, Remove EB/WB split phase, convert westbound thru-left lane to thru only	93	72	65		-28		93		65		-28	
TOTAL				192		164	160	-28	-30	192		164	160	-28	-30
2	Multi-modal			75		75		0		75		72		-3	
		Callahan Drive	Callahan Drive: convert interchange to signal control (with TSP)	0	81	75		75		0		81		81	
				24		24		0		24	20.6	21		-3	
		Sheridan Road	TSP with BAT lane	93	142	131		38		93		12		-81	
TOTAL				192		304	300	112	110	192		186	190	-6	-10
2	Boulevard			75		75		0		75		75		0	
		Callahan Drive	Callahan Drive: Roundabout	0	8	8		8		0		8		8	
				24		24		0		24		24		0	
		Sheridan Road	Sheridan Road: Roundabout	93	59	59		-34		93		59		-34	
TOTAL				192		166	170	-26	-30	192		166	170	-26	-30

Segment	Alternative	Intersection	Improvement Description	Traffic Operations						Transit					
				Segment Delay (GP)						Transit Delay					
				No Build Travel Time (s)	Ops Travel Time (s)	Build Travel Time (s)	Rounded	Change in Travel Time (s)	Rounded	No Build Transit Travel Time (s)	Ops Transit Travel Time (s)	Build Transit Travel Time (s)	Rounded	Change in Travel Time (s)	Rounded
3	No Build			64		64		0		124		124		0	
		Sylvan Road		16		16		0		16		16		0	
				50		50		0		80		80		0	
		E Broad Street		9		9		0		243	183.0	243		0	
				13		13		0		13		13		0	
		Hollis Street		4		4		0		4		4		0	
				38		38		0		68		68		0	
		NE Riddell Road		79		79		0		79		79		0	
TOTAL				273		273	270	0	0	627		627	630	0	0
3	Traffic Management			64		64		0		124		124		0	
		Sylvan Road	ASCT	16	13	12		-4		16		12		-4	
				50		50		0		80		80		0	
		E Broad Street	ASCT	9	9	8		-1		243	181.8	242		-1	
				13		13		0		13		13		0	
		Hollis Street	ASCT	4	4	4		0		4		4		0	
				38		38		0		68		68		0	
		NE Riddell Road	NE Riddell Road: ASCT, add southbound left turn lane, add receiving lane along eastbound NE Riddell	79	57	51		-28		79		51		-28	
TOTAL				273		240	240	-33	-30	627		593	590	-34	-30
3	Multi-modal		BAT lane	64		64		0		124	60.0	120		-4	
		Sylvan Road	TSP with BAT lane	16	51	47		31		16		1		-15	
			BAT lane, new bus pullout	50		50		0		80	46.8	107		27	
		E Broad Street	TSP with BAT lane	9	24	22		13		243		3		-240	
			BAT lane	13		13		0		13	10.8	11		-2	
		Hollis Street	TSP	4	5	5		1		4		5		1	
				38		38		0		68		68		0	
		NE Riddell Road	TSP	79	87	80		1		79		80		1	
TOTAL				273		319	320	46	50	627		394	390	-233	-230

Segment	Alternative	Intersection	Improvement Description	Traffic Operations						Transit					
				Segment Delay (GP)						Transit Delay					
				No Build Travel Time (s)	Ops Travel Time (s)	Build Travel Time (s)	Rounded	Change in Travel Time (s)	Rounded	No Build Transit Travel Time (s)	Ops Transit Travel Time (s)	Build Transit Travel Time (s)	Rounded	Change in Travel Time (s)	Rounded
3	Boulevard			64		64		0		124		124		0	
		Sylvan Road	Sylvan Way: Roundabout	16	18	18		2		16		18		2	
				50		50		0		80		80		0	
		E Broad Street	E Broad Street: Roundabout	9	5	5		-4		243	30.4	90		-153	
				13		13		0		13		13		0	
		Hollis Street	Hollis Street: Roundabout	4	5	5		1		4		5		1	
				38		38		0		68		68		0	
		NE Riddell Road	NE Riddell Road: Roundabout	79	10	10		-69		79		10		-69	
TOTAL				273		203	200	-70	-70	627		408	410	-219	-220
4	No Build			28		28		0		58		58		0	
		NE Furneys Lane		52		52		0		52		52		0	
				29		29		0		29		29		0	
		NE Fuson Road		13		13		0		13		13		0	
				47		47		0		77		77		0	
		NE McWilliams Road		68		68		0		68		68		0	
TOTAL				237		237	240	0	0	297		297	300	0	0
4	Traffic Management			28		28		0		58		58		0	
		NE Furneys Lane	ASCT	52	60	54		2		52		54		2	
				29		29		0		29		29		0	
		NE Fuson Road	ASCT	13	12	11		-2		13		11		-2	
				47		47		0		77		77		0	
		NE McWilliams Road	ASCT	68	68	61		-7		68		61		-7	
TOTAL				237		230	230	-7	-10	297		290	290	-7	-10

Segment	Alternative	Intersection	Improvement Description	Traffic Operations						Transit					
				Segment Delay (GP)						Transit Delay					
				No Build Travel Time (s)	Ops Travel Time (s)	Build Travel Time (s)	Rounded	Change in Travel Time (s)	Rounded	No Build Transit Travel Time (s)	Ops Transit Travel Time (s)	Build Transit Travel Time (s)	Rounded	Change in Travel Time (s)	Rounded
4	Multi-modal			28		28		0		58		58		0	
		NE Furneys Lane	TSP	52	53	49		-3		52		49		-3	
				29		29		0		29		29		0	
		NE Fuson Road	TSP	13	13	12		-1		13		12		-1	
				47		47		0		77		77		0	
		NE McWilliams Road	TSP	68	68	63		-5		68		63		-5	
TOTAL				237		227	230	-10	-10	297		287	290	-10	-10
4	Boulevard			28		28		0		58		58		0	
		NE Furneys Lane	TSP, new u-turns	52	83	76		24		52		76		24	
				29		29		0		29		29		0	
		NE Fuson Road	TSP, new u-turns	13	10	9		-4		13		9		-4	
				47		47		0		77		77		0	
		NE McWilliams Road	NE McWilliams Road: Roundabout	68	12	12		-56		68		12		-56	
TOTAL				237		202	200	-35	-40	297		262	260	-35	-40

Segment	Alternative	Improvement Description	Traffic Operations											Traffic Operations	Transit
			Total Corridor Vehicle Trips	% by Mode		AVO		People by Mode		Travel Time by Mode (sec)		Person Mobility (person/sec)		Person Mobility	Person Mobility
				GP	Transit	GP	Transit	GP	Transit	GP	Transit	GP	Transit	GP	Transit
1	No Build		2,765	99.6%	0.4%	1.13	15.00	3,112	166	402	462	7.7	0.4	8	0.4
1	Traffic Management	Signal phasing	2,765	99.6%	0.4%	1.13	15.00	3,112	166	319	379	9.7	0.4	10	0.4
1	Multi-modal	TSP	2,765	99.6%	0.4%	1.13	15.00	3,112	166	370	460	8.4	0.4	8	0.4
1	Boulevard	Roundabouts, TSP	2,765	99.6%	0.4%	1.13	15.00	3,112	166	324	384	9.6	0.4	10	0.4
2	No Build		2,530	99.6%	0.4%	1.13	15.00	2,847	152	192	192	14.8	0.8	15	0.8
2	Traffic Management	Signal phasing	2,530	99.6%	0.4%	1.13	15.00	2,847	152	164	164	17.4	0.9	17	0.9
2	Multi-modal	TSP, BAT lane	2,530	99.6%	0.4%	1.13	15.00	2,847	152	304	186	9.4	0.8	9	0.8
2	Boulevard	Roundabouts, TSP	2,530	99.6%	0.4%	1.13	15.00	2,847	152	166	166	17.2	0.9	17	0.9
3	No Build		2,240	99.6%	0.4%	1.13	15.00	2,521	134	273	627	9.2	0.2	9	0.2
3	Traffic Management	Signal phasing	2,240	99.6%	0.4%	1.13	15.00	2,521	134	240	593	10.5	0.2	11	0.2
3	Multi-modal	TSP, BAT lane	2,240	99.6%	0.4%	1.13	15.00	2,521	134	319	394	7.9	0.3	8	0.3
3	Boulevard	Roundabouts, TSP	2,240	99.6%	0.4%	1.13	15.00	2,521	134	203	408	12.4	0.3	12	0.3
4	No Build		2,095	99.6%	0.4%	1.13	15.00	2,358	126	237	297	9.9	0.4	10	0.4
4	Traffic Management	Signal phasing	2,095	99.6%	0.4%	1.13	15.00	2,358	126	230	290	10.3	0.4	10	0.4
4	Multi-modal	TSP	2,095	99.6%	0.4%	1.13	15.00	2,358	126	227	287	10.4	0.4	10	0.4
4	Boulevard	Roundabouts, TSP	2,095	99.6%	0.4%	1.13	15.00	2,358	126	202	262	11.7	0.5	12	0.5

Segment	Alternative	ID #	Improvement Description	Traffic Operations		
				Freight Access		
					Notes	
1	No Build		No Build			0
TOTAL				0		0
1	Traffic Management	TM-1	Full Corridor: Adapative Signal Control or Green Wave Signal Control			0
		TM-2	Full Corridor: Install ped lighting			0
		TM-3	Full Corridor: Improve wayfinding and placemaking			0
		TM-4	Burwell Street: Remove NB Phase, move east pedestrian crossing to west, and convert parking lot entrance to RIRO		No freight in parking lot	0
		TM-5	6th Street: Remove EB/WB split phase and provide concurrent lefts			0
		TM-6	11th Street: Add eastbound left turn lane, add receiving lane along northbound SR 303			0
TOTAL				0		0
1	Multi-modal	MM-1	Full Corridor: Transit Signal Priority			0
		MM-2	Full Corridor: Relocate obstructions to back of sidewalk			0
		MM-3	Full Corridor: Install ped lighting			0
		MM-4	Full Corridor: Improve wayfinding and placemaking			0
		MM-6	Burwell Street: Add SBL transit turn lane and TSP			0
		MM-7	Burwell to 5th: Remove center islands and replace with c-curb		No change for freight	0
		MM-8	6th to 11th: Add TWLTL			0
		MM-9	6th to 11th: Reduce gaps in transit stops		Potential delays to freight	0
		MM-10	6th to 11th: Install new pedestrian crossing with ped button			0
		MM-11	13th to 16th: Relocate bus stops to intersections			0
TOTAL				0		0
1	Boulevard	B-1	Full Corridor: Transit Signal Priority			0
		B-2	Full Corridor: Underground utilities			0
		B-3	Full Corridor: Install ped lighting			0
		B-4	Full Corridor: Improve wayfinding and placemaking			0
		B-7	Burwell Street: Convert signal to roundabout, close access to parking lot			0
		B-8	6th to 11th: Install new pedestrian crossing with ped button			0
TOTAL				0		0

Segment	Alternative	ID #	Improvement Description	Traffic Operations		
				Freight Access		
					Notes	
2	No Build		No Build			0
TOTAL				0		0
2	Traffic Management	TM-1	Full Corridor: Adapative Signal Control or Green Wave Signal Control			0
		TM-2	Full Corridor: Install ped lighting			0
		TM-3	Full Corridor: Improve wayfinding and placemaking			0
		TM-7	Warren Ave Bridge: Improve non-motorized connection off of Warren Ave Bridge to 18th			0
		TM-8	Warren Ave Bridge: Install cycle track on both sides			0
		TM-9	Warren Ave Bridge: Improve wayfinding for cycles			0
		TM-10	Callahan Drive: Install shared-use path along tunnel undercrossing			0
		TM-11	Callahan to Fuson: Complete bicycle connection to Almira Dr			0
		TM-12	Sheridan Road: Remove EB/WB split phase and replace with protected/permitted, convert westbound thru-left lane to thru only			0
TOTAL				0		0
2	Multi-modal	MM-1	Full Corridor: Transit Signal Priority			0
		MM-2	Full Corridor: Relocate obstructions to back of sidewalk			0
		MM-3	Full Corridor: Install ped lighting			0
		MM-4	Full Corridor: Improve wayfinding and placemaking			0
		MM-12	18th Street: Install shared-use path along new tunnel undercrossing			0
		MM-13	Warren Ave Bridge: Improve non-motorized connection off of Warren Ave Bridge to 18th			0
		MM-14	Warren Ave Bridge: Install cycle track on west side			0
		MM-15	Warren Ave Bridge: Improve wayfinding for cycles			0
		MM-16	Warren Ave Bridge: Install viewpoint			0
		MM-17	Warren Ave Bridge: Install safety call boxes and/or beacon			0
		MM-18	Warren Ave Bridge: Install high railings to limit ability to throw items off of bridge; add call box for help			0
		MM-19	Warren Ave Bridge: Widen sidewalks along east side and include barriers			0
		MM-20	Callahan Drive: Widen and complete sidewalks near intersection			0
		MM-21	Callahan Drive: Convert interchange to signal control		Potential benefit for freight	0
		MM-22	Callahan Drive: Install shared-use path along tunnel undercrossing			0
		MM-23	Callahan to Fuson: Complete bicycle connection to Almira Dr			0
TOTAL				0		0

Segment	Alternative	ID #	Improvement Description	Traffic Operations		
				Freight Access		
					Notes	
2	Boulevard	B-1	Full Corridor: Transit Signal Priority			0
		B-2	Full Corridor: Underground utilities			0
		B-3	Full Corridor: Install ped lighting			0
		B-4	Full Corridor: Improve wayfinding and placemaking			0
		B-9	17th Street: Remove northbound add lane and require a t-intersection for right turns			0
		B-10	Warren Ave Bridge: Improve non-motorized connection off of Warren Ave Bridge to 18th			0
		B-11	Warren Ave Bridge: Install cycle track on both sides			0
		B-12	Warren Ave Bridge: Improve wayfinding for cycles			0
		B-13	Warren Ave Bridge: Install viewpoint			0
		B-14	Warren Ave Bridge: Install safety call boxes and/or beacon			0
		B-15	Warren Ave Bridge: Install high railings to limit ability to throw items off of bridge; add call box for help			0
		B-16	Callahan Drive: Widen and complete sidewalks near intersection			0
		B-17	Callahan Drive: Convert interchange to roundabout		Potential benefit for freight	0
		B-18	Callahan Drive: Install shared-use path along tunnel undercrossing			0
		B-19	Callahan to Fuson: Complete bicycle connection to Almira Dr			0
		B-20	Callahan to Sheridan: median control		No change for freight - no driveways	0
		B-21	Sheridan Road: Convert signal to roundabout			0
TOTAL				0		0
3	No Build		No Build			0
TOTAL				0		0
3	Traffic Management	TM-1	Full Corridor: Adapative Signal Control or Green Wave Signal Control			0
		TM-2	Full Corridor: Install ped lighting			0
		TM-3	Full Corridor: Improve wayfinding and placemaking			0
		TM-13	NE Riddell Road: Add southbound left turn lane, add receiving lane along eastbound NE Riddell			0
TOTAL				0		0

Segment	Alternative	ID #	Improvement Description	Traffic Operations		
				Freight Access		
					Notes	
3	Multi-modal	MM-1	Full Corridor: Transit Signal Priority			0
		MM-2	Full Corridor: Relocate obstructions to back of sidewalk			0
		MM-3	Full Corridor: Install ped lighting			0
		MM-4	Full Corridor: Improve wayfinding and placemaking			0
		MM-5	North End: Widen sidewalks to 10' on east and west side			0
		MM-24	Sheridan to Hollis: Add northbound BAT lane	3	Ent/exits at Saar's, Pearl, Harrison Support	3
		MM-25	Sheridan to Sylvan: Improve pedestrian connectivity from neighborhoods to transit			0
		MM-26	Dibb Street: Install new ped crossing with ped button			0
		MM-27	Sylvan Way: Relocate bus stops to intersection			0
		MM-28	Sylvan to NE Riddell: Improve pedestrian connectivity from neighborhoods to transit			0
		MM-29	E Broad Street: Install bus pullout across from new transit center			0
		MM-30	E Broad Street: Improve pedestrian connectivity from neighborhoods to Wheaton Way TC			0
		MM-31	Hollis Street: Install northbound u-turn			0
		MM-32	NE Riddell Road: Relocate bus stops to intersection			0
TOTAL				3		3
3	Boulevard	B-1	Full Corridor: Transit Signal Priority			0
		B-2	Full Corridor: Underground utilities			0
		B-3	Full Corridor: Install ped lighting			0
		B-4	Full Corridor: Improve wayfinding and placemaking			0
		B-5	North End: Widen sidewalks to 10' on east and west side			0
		B-6	North End: Median control along blocks	3	Ent/exits at Saar's, Pearl, Harrison Support	3
		B-22	Sheridan to Sylvan: Improve pedestrian connectivity from neighborhoods to transit			0
		B-23	Dibb Street: Install new ped crossing with ped button			0
		B-24	Sylvan Way: Convert signal to roundabout			0
		B-25	Sylvan to NE Riddell: Improve pedestrian connectivity from neighborhoods to transit			0
		B-26	E Broad Street: Convert signal to roundabout			0
		B-27	E Broad Street: Improve pedestrian connectivity from neighborhoods to Wheaton Way TC			0
		B-28	Hollis Street: Convert signal to roundabout			0
		B-29	NE Riddell Road: Convert signal to roundabout			0
TOTAL				3		3

Segment	Alternative	ID #	Improvement Description	Traffic Operations		
				Freight Access		
					Notes	
4	No Build		No Build			0
TOTAL				0		0
4	Traffic Management	TM-1	Full Corridor: Adapative Signal Control or Green Wave Signal Control			0
		TM-2	Full Corridor: Install ped lighting			0
		TM-3	Full Corridor: Improve wayfinding and placemaking			0
		TM-14	Designate Almira Dr and NE Fuson Rd as bicycle routes			0
TOTAL				0		0
4	Multi-modal	MM-1	Full Corridor: Transit Signal Priority			0
		MM-2	Full Corridor: Relocate obstructions to back of sidewalk			0
		MM-3	Full Corridor: Install ped lighting			0
		MM-4	Full Corridor: Improve wayfinding and placemaking			0
		MM-5	North End: Widen sidewalks to 10' on east and west side			0
		MM-33	Riddell to McWilliams: Complete sidewalks on east and west sides			0
		MM-34	Designate Almira Dr and NE Fuson Rd as bicycle routes			0
		MM-35	Designate Pine Rd NE as bicycle route			0
TOTAL				0		0
4	Boulevard	B-1	Full Corridor: Transit Signal Priority			0
		B-2	Full Corridor: Underground utilities			0
		B-3	Full Corridor: Install ped lighting			0
		B-4	Full Corridor: Improve wayfinding and placemaking			0
		B-5	North End: Widen sidewalks to 10' on east and west side			0
		B-6	North End: Median control along blocks	1	Ent/exits at Lowe's	1
		B-30	Riddell to McWilliams: Complete sidewalks on east and west sides			0
		B-31	NE McWilliams Road: Convert signal to roundabout			0
		B-32	NE Furneys Ln: install northbound and southbound u-turns			0
		B-33	NE Fuson Rd: install northbound and southbound u-turns			0
		B-34	Designate Almira Dr and NE Fuson Rd as bicycle routes			0
		B-35	Designate Pine Rd NE as bicycle route			0
TOTAL				1		1

Segment	Alternative	ID #	Improvement Description	Transit		
				Accessibility		
					Notes	
1	No Build		No Build			0
TOTAL						0
1	Traffic Management	TM-1	Full Corridor: Adapative Signal Control or Green Wave Signal Control			0
		TM-2	Full Corridor: Install ped lighting			0
		TM-3	Full Corridor: Improve wayfinding and placemaking			0
		TM-4	Burwell Street: Remove NB Phase, move east pedestrian crossing to west, and convert parking lot entrance to RIRO			0
		TM-5	6th Street: Remove EB/WB split phase and provide concurrent lefts			0
		TM-6	11th Street: Add eastbound left turn lane, add receiving lane along northbound SR 303			0
TOTAL						0
1	Multi-modal	MM-1	Full Corridor: Transit Signal Priority			0
		MM-2	Full Corridor: Relocate obstructions to back of sidewalk			0
		MM-3	Full Corridor: Install ped lighting			0
		MM-4	Full Corridor: Improve wayfinding and placemaking			0
		MM-6	Burwell Street: Add SBL transit turn lane and TSP	1	Benefits transit accessibility	1
		MM-7	Burwell to 5th: Remove center islands and replace with c-curb			0
		MM-8	6th to 11th: Add TWLTL			0
		MM-9	6th to 11th: Reduce gaps in transit stops	1	Benefits transit accessibility	1
		MM-10	6th to 11th: Install new pedestrian crossing with ped button	1	Benefits transit accessibility	1
		MM-11	13th to 16th: Relocate bus stops to intersections	1	Benefits transit accessibility	1
TOTAL						4
1	Boulevard	B-1	Full Corridor: Transit Signal Priority			0
		B-2	Full Corridor: Underground utilities			0
		B-3	Full Corridor: Install ped lighting			0
		B-4	Full Corridor: Improve wayfinding and placemaking			0
		B-7	Burwell Street: Convert signal to roundabout, close access to parking lot			0
		B-8	6th to 11th: Install new pedestrian crossing with ped button	1	Benefits transit accessibility	1
TOTAL						1

Segment	Alternative	ID #	Improvement Description	Transit		
				Accessibility		
					Notes	
2	No Build		No Build			0
TOTAL						0
2	Traffic Management	TM-1	Full Corridor: Adapative Signal Control or Green Wave Signal Control			0
		TM-2	Full Corridor: Install ped lighting			0
		TM-3	Full Corridor: Improve wayfinding and placemaking			0
		TM-7	Warren Ave Bridge: Improve non-motorized connection off of Warren Ave Bridge to 18th			0
		TM-8	Warren Ave Bridge: Install cycle track on both sides			0
		TM-9	Warren Ave Bridge: Improve wayfinding for cycles			0
		TM-10	Callahan Drive: Install shared-use path along tunnel undercrossing			0
		TM-11	Callahan to Fuson: Complete bicycle connection to Almira Dr			0
		TM-12	Sheridan Road: Remove EB/WB split phase and replace with protected/permitted, convert westbound thru-left lane to thru only			0
TOTAL						0
2	Multi-modal	MM-1	Full Corridor: Transit Signal Priority			0
		MM-2	Full Corridor: Relocate obstructions to back of sidewalk			0
		MM-3	Full Corridor: Install ped lighting			0
		MM-4	Full Corridor: Improve wayfinding and placemaking			0
		MM-12	18th Street: Install shared-use path along new tunnel undercrossing			0
		MM-13	Warren Ave Bridge: Improve non-motorized connection off of Warren Ave Bridge to 18th			0
		MM-14	Warren Ave Bridge: Install cycle track on west side			0
		MM-15	Warren Ave Bridge: Improve wayfinding for cycles			0
		MM-16	Warren Ave Bridge: Install viewpoint			0
		MM-17	Warren Ave Bridge: Install safety call boxes and/or beacon			0
		MM-18	Warren Ave Bridge: Install high railings to limit ability to throw items off of bridge; add call box for help			0
		MM-19	Warren Ave Bridge: Widen sidewalks along east side and include barriers			0
		MM-20	Callahan Drive: Widen and complete sidewalks near intersection	1	Benefits transit accessibility	1
		MM-21	Callahan Drive: Convert interchange to signal control	1	BAT lane starting at Callahan	1
		MM-22	Callahan Drive: Install shared-use path along tunnel undercrossing			0
		MM-23	Callahan to Fuson: Complete bicycle connection to Almira Dr			0
TOTAL						2

Segment	Alternative	ID #	Improvement Description	Transit				
				Accessibility				
					Notes			
2	Boulevard	B-1	Full Corridor: Transit Signal Priority			0		
		B-2	Full Corridor: Underground utilities			0		
		B-3	Full Corridor: Install ped lighting			0		
		B-4	Full Corridor: Improve wayfinding and placemaking			0		
		B-9	17th Street: Remove northbound add lane and require a t-intersection for right turns			0		
		B-10	Warren Ave Bridge: Improve non-motorized connection off of Warren Ave Bridge to 18th			0		
		B-11	Warren Ave Bridge: Install cycle track on both sides			0		
		B-12	Warren Ave Bridge: Improve wayfinding for cycles			0		
		B-13	Warren Ave Bridge: Install viewpoint			0		
		B-14	Warren Ave Bridge: Install safety call boxes and/or beacon			0		
		B-15	Warren Ave Bridge: Install high railings to limit ability to throw items off of bridge; add call box for help			0		
		B-16	Callahan Drive: Widen and complete sidewalks near intersection	1	Benefits transit accessibility	1		
		B-17	Callahan Drive: Convert interchange to roundabout			0		
		B-18	Callahan Drive: Install shared-use path along tunnel undercrossing			0		
		B-19	Callahan to Fuson: Complete bicycle connection to Almira Dr			0		
		B-20	Callahan to Sheridan: median control			0		
		B-21	Sheridan Road: Convert signal to roundabout			0		
		TOTAL						1
		3	No Build		No Build			0
		TOTAL						0
3	Traffic Management	TM-1	Full Corridor: Adapative Signal Control or Green Wave Signal Control			0		
		TM-2	Full Corridor: Install ped lighting			0		
		TM-3	Full Corridor: Improve wayfinding and placemaking			0		
		TM-13	NE Riddell Road: Add southbound left turn lane, add receiving lane along eastbound NE Riddell			0		
TOTAL						0		

Segment	Alternative	ID #	Improvement Description	Transit		
				Accessibility		
					Notes	
3	Multi-modal	MM-1	Full Corridor: Transit Signal Priority			0
		MM-2	Full Corridor: Relocate obstructions to back of sidewalk			0
		MM-3	Full Corridor: Install ped lighting			0
		MM-4	Full Corridor: Improve wayfinding and placemaking			0
		MM-5	North End: Widen sidewalks to 10' on east and west side	1	Benefits transit accessibility	1
		MM-24	Sheridan to Hollis: Add northbound BAT lane	1	Benefits transit accessibility	1
		MM-25	Sheridan to Sylvan: Improve pedestrian connectivity from neighborhoods to transit	1	Benefits transit accessibility	1
		MM-26	Dibb Street: Install new ped crossing with ped button	1	Benefits transit accessibility	1
		MM-27	Sylvan Way: Relocate bus stops to intersection	1	Benefits transit accessibility	1
		MM-28	Sylvan to NE Riddell: Improve pedestrian connectivity from neighborhoods to transit	1	Benefits transit accessibility	1
		MM-29	E Broad Street: Install bus pullout across from new transit center	1	Benefits transit accessibility	1
		MM-30	E Broad Street: Improve pedestrian connectivity from neighborhoods to Wheaton Way TC	1	Benefits transit accessibility	1
		MM-31	Hollis Street: Install northbound u-turn			0
		MM-32	NE Riddell Road: Relocate bus stops to intersection	1	Benefits transit accessibility	1
TOTAL						9
3	Boulevard	B-1	Full Corridor: Transit Signal Priority			0
		B-2	Full Corridor: Underground utilities			0
		B-3	Full Corridor: Install ped lighting			0
		B-4	Full Corridor: Improve wayfinding and placemaking			0
		B-5	North End: Widen sidewalks to 10' on east and west side	1	Benefits transit accessibility	1
		B-6	North End: Median control along blocks			0
		B-22	Sheridan to Sylvan: Improve pedestrian connectivity from neighborhoods to transit	1	Benefits transit accessibility	1
		B-23	Dibb Street: Install new ped crossing with ped button	1	Benefits transit accessibility	1
		B-24	Sylvan Way: Convert signal to roundabout			0
		B-25	Sylvan to NE Riddell: Improve pedestrian connectivity from neighborhoods to transit	1	Benefits transit accessibility	1
		B-26	E Broad Street: Convert signal to roundabout			0
		B-27	E Broad Street: Improve pedestrian connectivity from neighborhoods to Wheaton Way TC	1	Benefits transit accessibility	1
		B-28	Hollis Street: Convert signal to roundabout			0
		B-29	NE Riddell Road: Convert signal to roundabout			0
TOTAL						5

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Segment	Alternative	ID #	Improvement Description	Transit		
				Accessibility		
					Notes	
4	No Build		No Build			0
TOTAL						0
4	Traffic Management	TM-1	Full Corridor: Adapative Signal Control or Green Wave Signal Control			0
		TM-2	Full Corridor: Install ped lighting			0
		TM-3	Full Corridor: Improve wayfinding and placemaking			0
		TM-14	Designate Almira Dr and NE Fuson Rd as bicycle routes			0
TOTAL						0
4	Multi-modal	MM-1	Full Corridor: Transit Signal Priority			0
		MM-2	Full Corridor: Relocate obstructions to back of sidewalk			0
		MM-3	Full Corridor: Install ped lighting			0
		MM-4	Full Corridor: Improve wayfinding and placemaking			0
		MM-5	North End: Widen sidewalks to 10' on east and west side	1	Benefits transit accessibility	1
		MM-33	Riddell to McWilliams: Complete sidewalks on east and west sides			0
		MM-34	Designate Almira Dr and NE Fuson Rd as bicycle routes			0
		MM-35	Designate Pine Rd NE as bicycle route			0
TOTAL						1
4	Boulevard	B-1	Full Corridor: Transit Signal Priority			0
		B-2	Full Corridor: Underground utilities			0
		B-3	Full Corridor: Install ped lighting			0
		B-4	Full Corridor: Improve wayfinding and placemaking			0
		B-5	North End: Widen sidewalks to 10' on east and west side	1	Benefits transit accessibility	1
		B-6	North End: Median control along blocks			0
		B-30	Riddell to McWilliams: Complete sidewalks on east and west sides			0
		B-31	NE McWilliams Road: Convert signal to roundabout			0
		B-32	NE Furneys Ln: install northbound and southbound u-turns			0
		B-33	NE Fuson Rd: install northbound and southbound u-turns			0
		B-34	Designate Almira Dr and NE Fuson Rd as bicycle routes			0
		B-35	Designate Pine Rd NE as bicycle route			0
TOTAL						1

Segment	Alternative	ID #	Improvement Description	ROW					
				Property Impacts			Property Acquisitions		
				\$K	Notes	Rounded	\$K	Notes	Rounded
1	No Build		No Build			\$ -			\$ -
TOTAL				\$ -		\$ -	\$ -		\$ -
1	Traffic Management	TM-1	Full Corridor: Adapative Signal Control or Green Wave Signal Control			\$ -			\$ -
		TM-2	Full Corridor: Install ped lighting			\$ -			\$ -
		TM-3	Full Corridor: Improve wayfinding and placemaking			\$ -			\$ -
		TM-4	Burwell Street: Remove NB Phase, move east pedestrian crossing to west, and convert parking lot entrance to RIRO			\$ -			\$ -
		TM-5	6th Street: Remove EB/WB split phase and provide concurrent lefts			\$ -			\$ -
		TM-6	11th Street: Add eastbound left turn lane, add receiving lane along northbound SR 303	\$ 76		\$ 76			\$ -
TOTAL				\$ 76		\$ 100	\$ -		\$ -
1	Multi-modal	MM-1	Full Corridor: Transit Signal Priority			\$ -			\$ -
		MM-2	Full Corridor: Relocate obstructions to back of sidewalk			\$ -			\$ -
		MM-3	Full Corridor: Install ped lighting			\$ -			\$ -
		MM-4	Full Corridor: Improve wayfinding and placemaking			\$ -			\$ -
		MM-6	Burwell Street: Add SBL transit turn lane and TSP	\$ 50		\$ 50			\$ -
		MM-7	Burwell to 5th: Remove center islands and replace with c-curb			\$ -			\$ -
		MM-8	6th to 11th: Add TWLTL			\$ -	\$ 3,030		\$ 3,030
		MM-9	6th to 11th: Reduce gaps in transit stops			\$ -			\$ -
		MM-10	6th to 11th: Install new pedestrian crossing with ped button			\$ -			\$ -
		MM-11	13th to 16th: Relocate bus stops to intersections			\$ -			\$ -
TOTAL				\$ 50		\$ 100	\$ 3,030		\$ 3,000
1	Boulevard	B-1	Full Corridor: Transit Signal Priority			\$ -			\$ -
		B-2	Full Corridor: Underground utilities			\$ -			\$ -
		B-3	Full Corridor: Install ped lighting			\$ -			\$ -
		B-4	Full Corridor: Improve wayfinding and placemaking			\$ -			\$ -
		B-7	Burwell Street: Convert signal to roundabout, close access to parking lot	\$ 189		\$ 189			\$ -
		B-8	6th to 11th: Install new pedestrian crossing with ped button			\$ -			\$ -
TOTAL				\$ 189		\$ 200	\$ -		\$ -

Segment	Alternative	ID #	Improvement Description	ROW					
				Property Impacts			Property Acquisitions		
				\$K	Notes	Rounded	\$K	Notes	Rounded
2	No Build		No Build			\$ -			\$ -
TOTAL				\$ -		\$ -	\$ -		\$ -
2	Traffic Management	TM-1	Full Corridor: Adapative Signal Control or Green Wave Signal Control			\$ -			\$ -
		TM-2	Full Corridor: Install ped lighting			\$ -			\$ -
		TM-3	Full Corridor: Improve wayfinding and placemaking			\$ -			\$ -
		TM-7	Warren Ave Bridge: Improve non-motorized connection off of Warren Ave Bridge to 18th			\$ -			\$ -
		TM-8	Warren Ave Bridge: Install cycle track on both sides			\$ -			\$ -
		TM-9	Warren Ave Bridge: Improve wayfinding for cycles			\$ -			\$ -
		TM-10	Callahan Drive: Install shared-use path along tunnel undercrossing			\$ -			\$ -
		TM-11	Callahan to Fuson: Complete bicycle connection to Almira Dr			\$ -			\$ -
		TM-12	Sheridan Road: Remove EB/WB split phase and replace with protected/permitted, convert westbound thru-left lane to thru only			\$ -			\$ -
TOTAL				\$ -		\$ -	\$ -		\$ -
2	Multi-modal	MM-1	Full Corridor: Transit Signal Priority			\$ -			\$ -
		MM-2	Full Corridor: Relocate obstructions to back of sidewalk			\$ -			\$ -
		MM-3	Full Corridor: Install ped lighting			\$ -			\$ -
		MM-4	Full Corridor: Improve wayfinding and placemaking			\$ -			\$ -
		MM-12	18th Street: Install shared-use path along new tunnel undercrossing			\$ -			\$ -
		MM-13	Warren Ave Bridge: Improve non-motorized connection off of Warren Ave Bridge to 18th			\$ -			\$ -
		MM-14	Warren Ave Bridge: Install cycle track on west side			\$ -			\$ -
		MM-15	Warren Ave Bridge: Improve wayfinding for cycles			\$ -			\$ -
		MM-16	Warren Ave Bridge: Install viewpoint			\$ -			\$ -
		MM-17	Warren Ave Bridge: Install safety call boxes and/or beacon			\$ -			\$ -
		MM-18	Warren Ave Bridge: Install high railings to limit ability to throw items off of bridge; add call box for help			\$ -			\$ -
		MM-19	Warren Ave Bridge: Widen sidewalks along east side and include barriers			\$ -			\$ -
		MM-20	Callahan Drive: Widen and complete sidewalks near intersection	\$ 147		\$ 147			\$ -
		MM-21	Callahan Drive: Convert interchange to signal control			\$ -			\$ -
		MM-22	Callahan Drive: Install shared-use path along tunnel undercrossing			\$ -			\$ -
		MM-23	Callahan to Fuson: Complete bicycle connection to Almira Dr			\$ -			\$ -
TOTAL				\$ 147		\$ 100	\$ -		\$ -

Segment	Alternative	ID #	Improvement Description	ROW							
				Property Impacts			Property Acquisitions				
				\$K	Notes	Rounded	\$K	Notes	Rounded		
2	Boulevard	B-1	Full Corridor: Transit Signal Priority			\$ -			\$ -		
		B-2	Full Corridor: Underground utilities			\$ -			\$ -		
		B-3	Full Corridor: Install ped lighting			\$ -			\$ -		
		B-4	Full Corridor: Improve wayfinding and placemaking			\$ -			\$ -		
		B-9	17th Street: Remove northbound add lane and require a t-intersection for right turns			\$ -			\$ -		
		B-10	Warren Ave Bridge: Improve non-motorized connection off of Warren Ave Bridge to 18th			\$ -			\$ -		
		B-11	Warren Ave Bridge: Install cycle track on both sides			\$ -			\$ -		
		B-12	Warren Ave Bridge: Improve wayfinding for cycles			\$ -			\$ -		
		B-13	Warren Ave Bridge: Install viewpoint			\$ -			\$ -		
		B-14	Warren Ave Bridge: Install safety call boxes and/or beacon			\$ -			\$ -		
		B-15	Warren Ave Bridge: Install high railings to limit ability to throw items off of bridge; add call box for help			\$ -			\$ -		
		B-16	Callahan Drive: Widen and complete sidewalks near intersection	\$ 147		\$ 147			\$ -		
		B-17	Callahan Drive: Convert interchange to roundabout			\$ -			\$ -		
		B-18	Callahan Drive: Install shared-use path along tunnel undercrossing			\$ -			\$ -		
		B-19	Callahan to Fuson: Complete bicycle connection to Almira Dr			\$ -			\$ -		
		B-20	Callahan to Sheridan: median control			\$ -			\$ -		
		B-21	Sheridan Road: Convert signal to roundabout	\$ 2,520		\$ 2,520	\$ 868	NW corner intersection	\$ 868		
		TOTAL				\$ 2,667		\$ 2,700	\$ 868		\$ 900
		3	No Build		No Build			\$ -			\$ -
		TOTAL				\$ -		\$ -	\$ -		\$ -
3	Traffic Management	TM-1	Full Corridor: Adapative Signal Control or Green Wave Signal Control			\$ -			\$ -		
		TM-2	Full Corridor: Install ped lighting			\$ -			\$ -		
		TM-3	Full Corridor: Improve wayfinding and placemaking			\$ -			\$ -		
		TM-13	NE Riddell Road: Add southbound left turn lane, add receiving lane along eastbound NE Riddell	\$ 76		\$ 76			\$ -		
TOTAL				\$ 76		\$ 100	\$ -		\$ -		

Segment	Alternative	ID #	Improvement Description	ROW					
				Property Impacts			Property Acquisitions		
				\$K	Notes	Rounded	\$K	Notes	Rounded
3	Multi-modal	MM-1	Full Corridor: Transit Signal Priority			\$ -			\$ -
		MM-2	Full Corridor: Relocate obstructions to back of sidewalk			\$ -			\$ -
		MM-3	Full Corridor: Install ped lighting			\$ -			\$ -
		MM-4	Full Corridor: Improve wayfinding and placemaking			\$ -			\$ -
		MM-5	North End: Widen sidewalks to 10' on east and west side	\$ 1,134	10' sidewalks	\$ 1,134			\$ -
		MM-24	Sheridan to Hollis: Add northbound BAT lane	\$ 372		\$ 372	\$ 5,200		\$ 5,200
		MM-25	Sheridan to Sylvan: Improve pedestrian connectivity from neighborhoods to transit	\$ 674	6' sidewalks	\$ 674			\$ -
		MM-26	Dibb Street: Install new ped crossing with ped button			\$ -			\$ -
		MM-27	Sylvan Way: Relocate bus stops to intersection			\$ -			\$ -
		MM-28	Sylvan to NE Riddell: Improve pedestrian connectivity from neighborhoods to transit			\$ -			\$ -
		MM-29	E Broad Street: Install bus pullout across from new transit center			\$ -			\$ -
		MM-30	E Broad Street: Improve pedestrian connectivity from neighborhoods to Wheaton Way TC			\$ -			\$ -
		MM-31	Hollis Street: Install northbound u-turn		ROW?	\$ -			\$ -
		MM-32	NE Riddell Road: Relocate bus stops to intersection			\$ -			\$ -
TOTAL				\$ 2,180		\$ 2,200	\$ 5,200		\$ 5,200
3	Boulevard	B-1	Full Corridor: Transit Signal Priority			\$ -			\$ -
		B-2	Full Corridor: Underground utilities			\$ -			\$ -
		B-3	Full Corridor: Install ped lighting			\$ -			\$ -
		B-4	Full Corridor: Improve wayfinding and placemaking			\$ -			\$ -
		B-5	North End: Widen sidewalks to 10' on east and west side	\$ 1,134	10' sidewalks	\$ 1,134			\$ -
		B-6	North End: Median control along blocks			\$ -			\$ -
		B-22	Sheridan to Sylvan: Improve pedestrian connectivity from neighborhoods to transit	\$ 674	6' sidewalks	\$ 674			\$ -
		B-23	Dibb Street: Install new ped crossing with ped button			\$ -			\$ -
		B-24	Sylvan Way: Convert signal to roundabout	\$ 378		\$ 378	\$ 2,820	Kitsap Bank	\$ 2,820
		B-25	Sylvan to NE Riddell: Improve pedestrian connectivity from neighborhoods to transit			\$ -			\$ -
		B-26	E Broad Street: Convert signal to roundabout	\$ 189		\$ 189			\$ -
		B-27	E Broad Street: Improve pedestrian connectivity from neighborhoods to Wheaton Way TC			\$ -			\$ -
		B-28	Hollis Street: Convert signal to roundabout	\$ 1,890		\$ 1,890	\$ 868	Los Casadores	\$ 868
		B-29	NE Riddell Road: Convert signal to roundabout	\$ 536		\$ 536			\$ -
TOTAL				\$ 4,801		\$ 4,800	\$ 3,688		\$ 3,700

Segment	Alternative	ID #	Improvement Description	ROW					
				Property Impacts			Property Acquisitions		
				\$K	Notes	Rounded	\$K	Notes	Rounded
4	No Build		No Build			\$ -			\$ -
TOTAL				\$ -		\$ -	\$ -		\$ -
4	Traffic Management	TM-1	Full Corridor: Adapative Signal Control or Green Wave Signal Control			\$ -			\$ -
		TM-2	Full Corridor: Install ped lighting			\$ -			\$ -
		TM-3	Full Corridor: Improve wayfinding and placemaking			\$ -			\$ -
		TM-14	Designate Almira Dr and NE Fuson Rd as bicycle routes			\$ -			\$ -
TOTAL				\$ -		\$ -	\$ -		\$ -
4	Multi-modal	MM-1	Full Corridor: Transit Signal Priority			\$ -			\$ -
		MM-2	Full Corridor: Relocate obstructions to back of sidewalk			\$ -			\$ -
		MM-3	Full Corridor: Install ped lighting			\$ -			\$ -
		MM-4	Full Corridor: Improve wayfinding and placemaking			\$ -			\$ -
		MM-5	North End: Widen sidewalks to 10' on east and west side		ROW?	\$ -			\$ -
		MM-33	Riddell to McWilliams: Complete sidewalks on east and west sides			\$ -			\$ -
		MM-34	Designate Almira Dr and NE Fuson Rd as bicycle routes			\$ -			\$ -
		MM-35	Designate Pine Rd NE as bicycle route			\$ -			\$ -
TOTAL				\$ -		\$ -	\$ -		\$ -
4	Boulevard	B-1	Full Corridor: Transit Signal Priority			\$ -			\$ -
		B-2	Full Corridor: Underground utilities			\$ -			\$ -
		B-3	Full Corridor: Install ped lighting			\$ -			\$ -
		B-4	Full Corridor: Improve wayfinding and placemaking			\$ -			\$ -
		B-5	North End: Widen sidewalks to 10' on east and west side		ROW?	\$ -			\$ -
		B-6	North End: Median control along blocks			\$ -			\$ -
		B-30	Riddell to McWilliams: Complete sidewalks on east and west sides			\$ -			\$ -
		B-31	NE McWilliams Road: Convert signal to roundabout			\$ -			\$ -
		B-32	NE Furneys Ln: install northbound and southbound u-turns		ROW?	\$ -			\$ -
		B-33	NE Fuson Rd: install northbound and southbound u-turns		ROW?	\$ -			\$ -
		B-34	Designate Almira Dr and NE Fuson Rd as bicycle routes			\$ -			\$ -
		B-35	Designate Pine Rd NE as bicycle route			\$ -			\$ -
TOTAL				\$ -		\$ -	\$ -		\$ -

Segment	Alternative	ID #	Improvement Description	Economic Vitality					
				Adjacent Property Values			Access to Business		
					Notes	Rounded		Notes	
1	No Build		No Build	0		0			0
TOTAL				0		0			0
1	Traffic Management	TM-1	Full Corridor: Adapative Signal Control or Green Wave Signal Control	2		2			0
		TM-2	Full Corridor: Install ped lighting	2.5		2.5			0
		TM-3	Full Corridor: Improve wayfinding and placemaking	2.5		2.5			0
		TM-4	Burwell Street: Remove NB Phase, move east pedestrian crossing to west, and convert parking lot entrance to RIRO	2		2			0
		TM-5	6th Street: Remove EB/WB split phase and provide concurrent lefts	2		2			0
		TM-6	11th Street: Add eastbound left turn lane, add receiving lane along northbound SR 303	2		2			0
TOTAL				13		15			0
1	Multi-modal	MM-1	Full Corridor: Transit Signal Priority	5		5			0
		MM-2	Full Corridor: Relocate obstructions to back of sidewalk	2.5		2.5			0
		MM-3	Full Corridor: Install ped lighting	2.5		2.5			0
		MM-4	Full Corridor: Improve wayfinding and placemaking	2.5		2.5			0
		MM-6	Burwell Street: Add SBL transit turn lane and TSP	5		5			0
		MM-7	Burwell to 5th: Remove center islands and replace with c-curb	0		0			0
		MM-8	6th to 11th: Add TWLTL	2					0
		MM-9	6th to 11th: Reduce gaps in transit stops	5		5			0
		MM-10	6th to 11th: Install new pedestrian crossing with ped button	0		0			0
		MM-11	13th to 16th: Relocate bus stops to intersections	5		5			0
TOTAL				29.5		30			0
1	Boulevard	B-1	Full Corridor: Transit Signal Priority	5		5			0
		B-2	Full Corridor: Underground utilities	2.5		2.5			0
		B-3	Full Corridor: Install ped lighting	2.5		2.5			0
		B-4	Full Corridor: Improve wayfinding and placemaking	2.5		2.5			0
		B-7	Burwell Street: Convert signal to roundabout, close access to parking lot	4.5		4.5			0
		B-8	6th to 11th: Install new pedestrian crossing with ped button	0		0			0
TOTAL				17		15			0

Segment	Alternative	ID #	Improvement Description	Economic Vitality					
				Adjacent Property Values			Access to Business		
					Notes	Rounded		Notes	
2	No Build		No Build	0		0			0
TOTAL				0		0			0
2	Traffic Management	TM-1	Full Corridor: Adapative Signal Control or Green Wave Signal Control	2		2			0
		TM-2	Full Corridor: Install ped lighting	2.5		2.5			0
		TM-3	Full Corridor: Improve wayfinding and placemaking	2.5		2.5			0
		TM-7	Warren Ave Bridge: Improve non-motorized connection off of Warren Ave Bridge to 18th	0		0			0
		TM-8	Warren Ave Bridge: Install cycle track on both sides	0		0			0
		TM-9	Warren Ave Bridge: Improve wayfinding for cycles	0		0			0
		TM-10	Callahan Drive: Install shared-use path along tunnel undercrossing	0		0			0
		TM-11	Callahan to Fuson: Complete bicycle connection to Almira Dr	0		0			0
		TM-12	Sheridan Road: Remove EB/WB split phase and replace with protected/permitted, convert westbound thru-left lane to thru only	2		2			0
TOTAL				9		10			0
2	Multi-modal	MM-1	Full Corridor: Transit Signal Priority	5		5			0
		MM-2	Full Corridor: Relocate obstructions to back of sidewalk	2.5		2.5			0
		MM-3	Full Corridor: Install ped lighting	2.5		2.5			0
		MM-4	Full Corridor: Improve wayfinding and placemaking	2.5		2.5			0
		MM-12	18th Street: Install shared-use path along new tunnel undercrossing	0		0			0
		MM-13	Warren Ave Bridge: Improve non-motorized connection off of Warren Ave Bridge to 18th	0		0			0
		MM-14	Warren Ave Bridge: Install cycle track on west side	0		0			0
		MM-15	Warren Ave Bridge: Improve wayfinding for cycles	0		0			0
		MM-16	Warren Ave Bridge: Install viewpoint	0		0			0
		MM-17	Warren Ave Bridge: Install safety call boxes and/or beacon	0		0			0
		MM-18	Warren Ave Bridge: Install high railings to limit ability to throw items off of bridge; add call box for help	2.5		2.5			0
		MM-19	Warren Ave Bridge: Widen sidewalks along east side and include barriers	0		0			0
		MM-20	Callahan Drive: Widen and complete sidewalks near intersection	0		0			0
		MM-21	Callahan Drive: Convert interchange to signal control	2		2			0
		MM-22	Callahan Drive: Install shared-use path along tunnel undercrossing	0		0			0
		MM-23	Callahan to Fuson: Complete bicycle connection to Almira Dr	0		0			0
TOTAL				17		15			0

Segment	Alternative	ID #	Improvement Description	Economic Vitality							
				Adjacent Property Values			Access to Business				
					Notes	Rounded		Notes			
2	Boulevard	B-1	Full Corridor: Transit Signal Priority	5		5			0		
		B-2	Full Corridor: Underground utilities	2.5		2.5			0		
		B-3	Full Corridor: Install ped lighting	2.5		2.5			0		
		B-4	Full Corridor: Improve wayfinding and placemaking	2.5		2.5			0		
		B-9	17th Street: Remove northbound add lane and require a t-intersection for right turns	2		2			0		
		B-10	Warren Ave Bridge: Improve non-motorized connection off of Warren Ave Bridge to 18th	0		0			0		
		B-11	Warren Ave Bridge: Install cycle track on both sides	0		0			0		
		B-12	Warren Ave Bridge: Improve wayfinding for cycles	0		0			0		
		B-13	Warren Ave Bridge: Install viewpoint	0		0			0		
		B-14	Warren Ave Bridge: Install safety call boxes and/or beacon	0		0			0		
		B-15	Warren Ave Bridge: Install high railings to limit ability to throw items off of bridge; add call box for help	2.5		2.5			0		
		B-16	Callahan Drive: Widen and complete sidewalks near intersection	0		0			0		
		B-17	Callahan Drive: Convert interchange to roundabout	4.5		4.5			0		
		B-18	Callahan Drive: Install shared-use path along tunnel undercrossing	0		0			0		
		B-19	Callahan to Fuson: Complete bicycle connection to Almira Dr	0		0			0		
		B-20	Callahan to Sheridan: median control	1.5		1.5		Median present, but no businesses	0		
		B-21	Sheridan Road: Convert signal to roundabout	4.5		4.5			0		
		TOTAL				27.5		30			0
		3	No Build		No Build	0		0			0
TOTAL				0		0			0		
3	Traffic Management	TM-1	Full Corridor: Adapative Signal Control or Green Wave Signal Control	2		2			0		
		TM-2	Full Corridor: Install ped lighting	2.5		2.5			0		
		TM-3	Full Corridor: Improve wayfinding and placemaking	2.5		2.5			0		
		TM-13	NE Riddell Road: Add southbound left turn lane, add receiving lane along eastbound NE Riddell	2		2			0		
TOTAL				9		10			0		

Segment	Alternative	ID #	Improvement Description	Economic Vitality					
				Adjacent Property Values			Access to Business		
					Notes	Rounded		Notes	
3	Multi-modal	MM-1	Full Corridor: Transit Signal Priority	5		5			0
		MM-2	Full Corridor: Relocate obstructions to back of sidewalk	2.5		2.5			0
		MM-3	Full Corridor: Install ped lighting	2.5		2.5			0
		MM-4	Full Corridor: Improve wayfinding and placemaking	2.5		2.5			0
		MM-5	North End: Widen sidewalks to 10' on east and west side	0		0			0
		MM-24	Sheridan to Hollis: Add northbound BAT lane	5		5	1	Benefit to access to business	1
		MM-25	Sheridan to Sylvan: Improve pedestrian connectivity from neighborhoods to transit	5		5			0
		MM-26	Dibb Street: Install new ped crossing with ped button	0		0			0
		MM-27	Sylvan Way: Relocate bus stops to intersection	5		5			0
		MM-28	Sylvan to NE Riddell: Improve pedestrian connectivity from neighborhoods to transit	5		5			0
		MM-29	E Broad Street: Install bus pullout across from new transit center	5		5			0
		MM-30	E Broad Street: Improve pedestrian connectivity from neighborhoods to Wheaton Way TC	0		0			0
		MM-31	Hollis Street: Install northbound u-turn	2		2			0
		MM-32	NE Riddell Road: Relocate bus stops to intersection	5		5			0
TOTAL				44.5		45			1
3	Boulevard	B-1	Full Corridor: Transit Signal Priority	5		5			0
		B-2	Full Corridor: Underground utilities	2.5		2.5			0
		B-3	Full Corridor: Install ped lighting	2.5		2.5			0
		B-4	Full Corridor: Improve wayfinding and placemaking	2.5		2.5			0
		B-5	North End: Widen sidewalks to 10' on east and west side	0		0			0
		B-6	North End: Median control along blocks	1.5		1.5	1	Benefit to access to business	1
		B-22	Sheridan to Sylvan: Improve pedestrian connectivity from neighborhoods to transit	5		5			0
		B-23	Dibb Street: Install new ped crossing with ped button	0		0			0
		B-24	Sylvan Way: Convert signal to roundabout	4.5		4.5			0
		B-25	Sylvan to NE Riddell: Improve pedestrian connectivity from neighborhoods to transit	5		5			0
		B-26	E Broad Street: Convert signal to roundabout	4.5		4.5			0
		B-27	E Broad Street: Improve pedestrian connectivity from neighborhoods to Wheaton Way TC	0		0			0
		B-28	Hollis Street: Convert signal to roundabout	4.5		4.5			0
		B-29	NE Riddell Road: Convert signal to roundabout	4.5		4.5			0
TOTAL				42		40			1

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Segment	Alternative	ID #	Improvement Description	Economic Vitality					
				Adjacent Property Values			Access to Business		
					Notes	Rounded		Notes	
4	No Build		No Build	0		0			0
TOTAL				0		0			0
4	Traffic Management	TM-1	Full Corridor: Adapative Signal Control or Green Wave Signal Control	2		2			0
		TM-2	Full Corridor: Install ped lighting	2.5		2.5			0
		TM-3	Full Corridor: Improve wayfinding and placemaking	2.5		2.5			0
		TM-14	Designate Almira Dr and NE Fuson Rd as bicycle routes	0		0			0
TOTAL				4.5		5			0
4	Multi-modal	MM-1	Full Corridor: Transit Signal Priority	5		5			0
		MM-2	Full Corridor: Relocate obstructions to back of sidewalk	2.5		2.5			0
		MM-3	Full Corridor: Install ped lighting	2.5		2.5			0
		MM-4	Full Corridor: Improve wayfinding and placemaking	2.5		2.5			0
		MM-5	North End: Widen sidewalks to 10' on east and west side	0		0			0
		MM-33	Riddell to McWilliams: Complete sidewalks on east and west sides	0		0			0
		MM-34	Designate Almira Dr and NE Fuson Rd as bicycle routes	0		0			0
		MM-35	Designate Pine Rd NE as bicycle route	0		0			0
TOTAL				12.5		15			0
4	Boulevard	B-1	Full Corridor: Transit Signal Priority	5		5			0
		B-2	Full Corridor: Underground utilities	2.5		2.5			0
		B-3	Full Corridor: Install ped lighting	2.5		2.5			0
		B-4	Full Corridor: Improve wayfinding and placemaking	2.5		2.5			0
		B-5	North End: Widen sidewalks to 10' on east and west side	0		0			0
		B-6	North End: Median control along blocks	1.5		1.5	1	Benefit to access to business	1
		B-30	Riddell to McWilliams: Complete sidewalks on east and west sides	0		0			0
		B-31	NE McWilliams Road: Convert signal to roundabout	4.5		4.5			0
		B-32	NE Furneys Ln: install northbound and southbound u-turns	2		2			0
		B-33	NE Fuson Rd: install northbound and southbound u-turns	2		2			0
		B-34	Designate Almira Dr and NE Fuson Rd as bicycle routes	0		0			0
		B-35	Designate Pine Rd NE as bicycle route	0		0			0
TOTAL				22.5		25			1

Segment	Alternative	Safety		Traffic Operations	Transit	ROW		TOTAL
		Total Crash Frequency	Crash Severity	Segment Delay	Transit Delay	Property Impacts	Property Acquisitions	
		Rank	Rank	Rank	Rank	Rank	Rank	Rating
TOTAL	Opt A1: Sheridan Add (East)	<div><div></div></div>	<div><div></div></div>	<div><div></div></div>	<div><div></div></div>	<div><div></div></div>	<div><div></div></div>	<div><div></div></div>
	Opt A1b: Sheridan Add (Center)	<div><div></div></div>	<div><div></div></div>	<div><div></div></div>	<div><div></div></div>	<div><div></div></div>	<div><div></div></div>	<div><div></div></div>
	Opt A2: Sheridan No TWLTL	<div><div></div></div>	<div><div></div></div>	<div><div></div></div>	<div><div></div></div>	<div><div></div></div>	<div><div></div></div>	<div><div></div></div>
	Opt B1: Callahan Add (East)	<div><div></div></div>	<div><div></div></div>	<div><div></div></div>	<div><div></div></div>	<div><div></div></div>	<div><div></div></div>	<div><div></div></div>
	Opt B2: Callahan No TWLTL	<div><div></div></div>	<div><div></div></div>	<div><div></div></div>	<div><div></div></div>	<div><div></div></div>	<div><div></div></div>	<div><div></div></div>

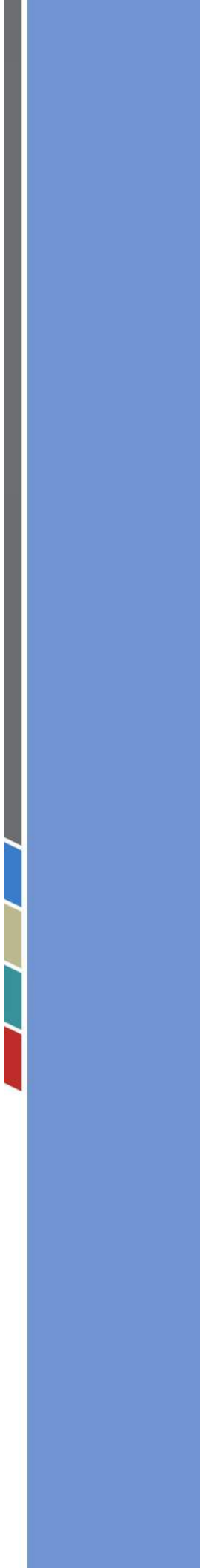
Segment	Alternative	Improvement Description			Safety					Traffic Operations					Transit					ROW					
					Total Crash Frequency			Crash Severity			Segment Delay					Transit Delay					Property Impacts (incl. parking)		Property Acquisitions		
					No Build Crash Rate (KABCO)	HSM Rate	Change	No Build Crash Rate (KABCO)	HSM Rate	Change	No Build Travel Time (s)	Ops Travel Time (s)	Build Travel Time (s)	Change in Travel Time (s)	Factors	No Build Transit Travel Time (s)	Ops Transit Travel Time (s)	Build Transit Travel Time (s)	Change in Travel Time (s)	Dwell Time	\$K	Notes	\$K	Notes	
2	Multi-modal	Option A1: Sheridan to Hollis, add new lane to east			10.4	10.8	0.4	2.8	2.9	0.1	75	72	72	-3		75	72	72	-3		\$ -		\$ -		
			Callahan Drive	signal control (with TSP)	7.4	8.9	1.5	2.7	3.3	0.6	0	82	75	75	8%	0	82	75	75		\$ -		\$ -		
					3.0	2.9	-0.1	0.9	0.8	-0.1	24	30	30	6		24	30	30	6		\$ -		\$ -		
			Sheridan Road	TSP	8.3	8.3	0.0	3.1	3.1	0.0	93	75	69	-24	8%	93	75	69	-24		\$ -		\$ -		
		TOTAL			29.1	30.9	1.8	9.5	10.1	0.6	192		246	54		192		246	54		\$ -		\$ -		
		Option A1b: Sheridan to Hollis, add new lane, center roadway			10.4	10.8	0.4	2.8	2.9	0.1	75	72	72	-3		75	72	72	-3		\$ -		\$ -		
			Callahan Drive	signal control (with TSP)	7.4	8.9	1.5	2.7	3.3	0.6	0	82	75	75		0	82	75	75		\$ -		\$ -		
					3.0	2.9	-0.1	0.9	0.8	-0.1	24	30	30	6		24	30	30	6		\$ -		\$ -		
			Sheridan Road	TSP	8.3	8.3	0.0	3.1	3.1	0.0	93	75	69	-24		93	75	69	-24		\$ -		\$ -		
		TOTAL			29.1	30.9	1.8	9.5	10.1	0.6	192		246	54		192		246	54		\$ -		\$ -		
		Option A2: Sheridan to Hollis, remove center lane and shift traffic to west			10.4	10.8	0.4	2.8	2.9	0.1	75	72	72	-3		75	72	72	-3		\$ -		\$ -		
			Callahan Drive	signal control (with TSP)	7.4	8.9	1.5	2.7	3.3	0.6	0	82	75	75	8%	0	82	75	75		\$ -		\$ -		
					3.0	2.9	-0.1	0.9	0.8	-0.1	24	30	30	6		24	30	30	6		\$ -		\$ -		
			Sheridan Road	TSP	8.3	8.4	0.1	3.1	3.2	0.1	93	149	137	44	8%	93	149	137	44		\$ -		\$ -		
		TOTAL			29.1	31.0	1.9	9.5	10.2	0.7	192		315	123		192		315	123		\$ -		\$ -		
		Option B1: Callahan to Hollis, add new lane			10.4	10.8	0.4	2.8	2.9	0.1	75	72	72	-3		75	72	72	-3		\$ -		\$ -		
			Callahan Drive	signal control (with TSP)	7.4	8.9	1.5	2.7	3.3	0.6	0	81	75	75	8%	0	81	75	75		\$ -		\$ -		
					3.0	2.9	-0.1	0.9	0.8	-0.1	24	30	30	6		24	21	21	-3		\$ -		\$ -		
			Sheridan Road	TSP with BAT lane	8.3	8.3	0.0	3.1	3.1	0.0	93	64	59	-34	8%	93	10	9	-84		\$ -		\$ -		
		TOTAL			29.1	30.9	1.8	9.5	10.1	0.6	192		235	43		192		177	-15		\$ -		\$ -		
		Option B2: Callahan to Hollis, remove center lane and shift traffic to west			10.4	10.8	0.4	2.8	2.9	0.1	75	72	72	-3		75	72	72	-3		\$ -		\$ -		
			Callahan Drive	signal control (with TSP)	7.4	8.9	1.5	2.7	3.3	0.6	0	81	75	75	8%	0	81	75	75		\$ -		\$ -		
					3.0	2.9	-0.1	0.9	0.8	-0.1	24	30	30	6		24	21	21	-3		\$ -		\$ -		
			Sheridan Road	TSP with BAT lane	8.3	8.4	0.1	3.1	3.2	0.1	93	142	131	38	8%	93	12	11	-82		\$ -		\$ -		
		TOTAL			29.1	31.0	1.9	9.5	10.2	0.7	192		307	115		192		179	-13		\$ -		\$ -		
		Option A1: Sheridan to Hollis, add new lane to east			21.4	20.8	-0.6	6.7	6.5	-0.2	64		64	0		124	60	120	-4	60.0	\$ 1,307	BAT Lane	\$ 836	Korean Mission Church	
			Sylvan Road	TSP with BAT lane	8.1	8.2	0.1	3.1	3.1	0.0	16	9	8	-8	8%	16	0	0	-16		\$ 565	Compensation for lost parking	\$ 1,500	Key Bank	
				BAT lane, new bus pullout	20.7	20.0	-0.7	6.5	6.3	-0.2	50		50	0		80	47	107	27	60.0			\$ 1,640	McDonalds	
			E Broad Street	TSP with BAT lane	7.8	7.8	0.0	2.9	2.9	0.0	9	7	6	-3	8%	243	0	0	-243				\$ 1,350	Auto Spa	
				BAT lane	5.0	8.0	3.0	1.6	2.6	1.0	13		13	0		13	11	11	-2				\$ 800	Money Tree	
			Hollis Street	TSP	4.5	4.5	0.0	1.6	1.6	0.0	4	5	5	1	8%	4		5	1						
					13.4	13.1	-0.3	4.2	4.1	-0.1	38		38	0		68		68	0	30.0					
			NE Riddell Road	TSP	7.3	7.3	0.0	2.7	2.7	0.0	79	78	72	-7	8%	79		72	-7						
		TOTAL			88.2	89.7	1.5	29.3	29.8	0.5	273		256	-17		627		382	-245		\$ 1,872		\$ 6,126		

Segment	Alternative	Improvement Description			Safety					Traffic Operations					Transit					ROW								
					Total Crash Frequency			Crash Severity			Segment Delay					Transit Delay					Property Impacts (incl. parking)		Property Acquisitions					
3	Multi-modal	Option A1b: Sheridan to Hollis, add new lane, center roadway			21.4	20.8	-0.6	6.7	6.5	-0.2	64	0	64	0		124	60	120	-4		\$ 1,307	BAT Lane	\$ 868	Los Casadores				
			Sylvan Road	TSP with BAT lane	8.1	8.2	0.1	3.1	3.1	0.0	16	9	8	-8		16	0	0	-16		\$ 282	Compensation for lost parking	\$ 836	Korean Mission Churb				
				BAT lane, new bus pullout	20.7	20.0	-0.7	6.5	6.3	-0.2	50	0	50	0		80	47	107	27			\$ 2,900	Sheridan Plaza					
			E Broad Street	TSP with BAT lane	7.8	7.8	0.0	2.9	2.9	0.0	9	7	6	-3		243	0	0	-243			\$ 2,600	Midway Inn					
				BAT lane	5.0	8.0	3.0	1.6	2.6	1.0	13	0	13	0		13	11	11	-2			\$ 555	Penticles					
			Hollis Street	TSP	4.5	4.5	0.0	1.6	1.6	0.0	4	5	5	1		4	0	5	1			\$ 1,500	Key Bank					
					13.4	13.1	-0.3	4.2	4.1	-0.1	38	0	38	0		68	0	68	0			\$ 2,820	Kitsap Bank					
			NE Riddell Road	TSP	7.3	7.3	0.0	2.7	2.7	0.0	79	78	72	-7		79	0	72	-7			\$ 6,400	Fuji Buffet					
																						\$ 800	Money Tree					
		TOTAL				88.2	89.7	1.5	29.3	29.8	0.5	273		256	-17		627		382	-245		\$ 1,589		\$ 19,279				
		Option A2: Sheridan to Hollis, remove center lane and shift traffic to west							21.4	10.1	-11.3	6.7	3.2	-3.5	64		64	0		124	60	120	-4	60.0				
				Sylvan Road	TSP with BAT lane	8.1	8.9	0.8	3.1	3.4	0.3	16	52	48	32	8%	16	1	1	-15			\$ 5,200	Parker Lumper				
					BAT lane, new bus pullout	20.7	8.6	-12.1	6.5	2.7	-3.8	50		50	0		80	47	107	27	60.0							
				E Broad Street	TSP with BAT lane	7.8	8.4	0.6	2.9	3.2	0.3	9	24	22	13	8%	243	3	3	-240								
					BAT lane	5.0	2.7	-2.3	1.6	0.9	-0.7	13		13	0		13	11	11	-2								
				Hollis Street	TSP	4.5	4.9	0.4	1.6	1.7	0.1	4	5	5	1	8%	4		5	1		\$ 372	U-Turns					
						13.4	13.1	-0.3	4.2	4.1	-0.1	38		38	0		68		68	0	30.0							
				NE Riddell Road	TSP	7.3	7.3	0.0	2.7	2.7	0.0	79	87	80	1	8%	79		80	1								
		TOTAL				88.2	64.0	-24.2	29.3	21.9	-7.4	273		320	47		627		395	-232		\$ 372		\$ 5,200				
		Option B1: Callahan to Hollis, add new lane							21.4	20.8	-0.6	6.7	6.5	-0.2	64		64	0		124	60	120	-4	60.0	\$ 1,307	BAT Lane	\$ 836	Korean Mission Church
				Sylvan Road	TSP with BAT lane	8.1	8.2	0.1	3.1	3.1	0.0	16	9	8	-8	8%	16	0	0	-16		\$ 565	Compensation for lost parking	\$ 1,500	Key Bank			
					BAT lane, new bus pullout	20.7	20.0	-0.7	6.5	6.3	-0.2	50		50	0		80	47	107	27	60.0			\$ 1,640	McDonalds			
				E Broad Street	TSP with BAT lane	7.8	7.8	0.0	2.9	2.9	0.0	9	7	6	-3	8%	243	0	0	-243			\$ 1,350	Auto Spa				
					BAT lane	5.0	8.0	3.0	1.6	2.6	1.0	13		13	0		13	11	11	-2			\$ 800	Money Tree				
				Hollis Street	TSP	4.5	4.5	0.0	1.6	1.6	0.0	4	5	5	1	8%	4		5	1								
						13.4	13.1	-0.3	4.2	4.1	-0.1	38		38	0		68		68	0	30.0							
				NE Riddell Road	TSP	7.3	7.3	0.0	2.7	2.7	0.0	79	78	72	-7	8%	79		72	-7								
		TOTAL				88.2	89.7	1.5	29.3	29.8	0.5	273		256	-17		627		382	-245		\$ 1,872		\$ 6,126				
		Option B2: Callahan to Hollis, remove center lane and shift traffic to west							21.4	10.1	-11.3	6.7	3.2	-3.5	64		64	0		124	60	120	-4	60.0	\$ -	0		
				Sylvan Road	TSP with BAT lane	8.1	8.9	0.8	3.1	3.4	0.3	16	51	47	31	8%	16	1	1	-15		\$ -	0	\$ 5,200	Parker Lumper			
					BAT lane, new bus pullout	20.7	8.6	-12.1	6.5	2.7	-3.8	50		50	0		80	47	107	27	60.0	\$ -	0	\$ -	0			
				E Broad Street	TSP with BAT lane	7.8	8.4	0.6	2.9	3.2	0.3	9	24	22	13	8%	243	3	3	-240		\$ -	0	\$ -	0			
					BAT lane	5.0	2.7	-2.3	1.6	0.9	-0.7	13		13	0		13	11	11	-2		\$ -	0	\$ -	0			
				Hollis Street	TSP	4.5	4.9	0.4	1.6	1.7	0.1	4	5	5	1	8%	4		5	1		\$ 372	U-Turns	\$ -	0			
						13.4	13.1	-0.3	4.2	4.1	-0.1	38		38	0		68		68	0	30.0	\$ -	0	\$ -	0			
				NE Riddell Road	TSP	7.3	7.3	0.0	2.7	2.7	0.0	79	87	80	1	8%	79		80	1		\$ -	0	\$ -	0			
		TOTAL				88.2	64.0	-24.2	29.3	21.9	-7.4	273		319	46		627		395	-232		\$ 372		\$ 5,200				



## Appendix L-2

Future Build Alternatives HSM  
Predicted Analysis Results



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## **HSM Part C Training Tool: HSM1 Extended Spreadsheet for Part C Chapter 12 (v.9, 2016)**





### **Calculates the predicted safety performance for urban and suburban arterials**

#### **HSM Part C Training Tool Instructions**

##### Overview

This series of spreadsheets has been developed to assist in the application of the predictive methods contained in the Highway Safety Manual (HSM), 1<sup>st</sup> Edition for analyzing: urban and suburban arterials, rural multilane roads, and rural two lane roads.

##### Data Color Guidelines

	Required user input data
	Required user input data restricted to dropdown values
	Automatically updated information based on previous user input data
	User work space (notes, comments, etc.)

##### Upon Opening the File

1. Ensure that macros are enabled in Excel. (Refer to Microsoft Help for more information about enabling macros.)
2. Read the terms of use and follow the directions on the prompts.
3. If analyzing a new project, follow the prompts to save as a new file.
4. Read all instructions before proceeding.

##### General Steps for Project Safety Performance Analysis

1. Navigate to the "Project Information" tab.
2. Using the color guidelines above, populate the required information under General Information.
3. Push the "Update Element Table" button to set up the element table. \*Note: Elements cannot be added to the analysis once this button has been pushed.
4. Fill in the Route, Location Description, and Jurisdiction for each element. For intersections, also select whether or not the intersection is signalized. And where applicable, select divided or undivided for each segment.
5. Once all of the information has been entered, push the "Proceed to 1<sup>st</sup> Element" button.
6. On the current tab (either "Segment 1" or "Intersection 1"), enter all of the required information (refer to color guidelines).
7. Ensure that all necessary information has been entered, then push the "Next Element" button.
8. Repeat steps 6 and 7 for all project elements.
9. On the tab for the final project element, push the "Generate Report" button to run the analysis and redirect to the "Report" page, giving a summary of the analysis results.
10. At this time, any of the input information on the element tabs can be altered if desired. The results will update automatically.

##### General Steps for a Multi-Year Project Safety Performance Analysis

1. Complete all steps for the Project Safety Performance Analysis first.
2. Navigate to the "Multi-Year Analysis Inputs" tab.
3. Enter the required information (Input Data\*). Refer to color guidelines as necessary. \*Note: the Traffic Growth Rate is a linear growth rate per year (i.e. the volume increases by the same number of vehicles each year) and should be entered as a percent, not as a decimal.
4. Once all of the information is complete, push the "Run Multi-Year Analysis" button to perform the analysis.
5. The "Multi-Year Summary Report" tab provides a summary table of the multi-year analysis, with the expected average crash frequency, the potential for safety improvement, and a discussion of the results for the analysis period.

**PROJECT SAFETY PERFORMANCE ANALYSIS INPUT SHEET**

**General Information**

Project Name	SR 303 Corridor Study	Contact Email	ewelter@parametrix.com
Project Description	Burwell to McWilliams	Contact Phone	(206) 838-3975
Reference Number	Traffic Management Alternative	Date Performed	02/07/20
Analyst	Emily Welter	Analysis Year	2040
Agency/Company	Parametrix		
# of Segments in Analysis	13	This spreadsheet calculates the predicted average crash frequency	
# of Intersections in Analysis	14		

INDIVIDUAL PROJECT ELEMENTS	LOCATION INFORMATION		JURISDICTION	INTERSECTIONS ONLY
	Route	Location Description		Signalized or Unsignalized?

**SEGMENTS**

Segment 1	SR 303	Burwell to 6th	City of Bremerton	-
Segment 2	SR 303	6th to 11th	City of Bremerton	-
Segment 3	SR 303	11th to 13th	City of Bremerton	-
Segment 4	SR 303	13th to 16th	City of Bremerton	-
Segment 5	SR 303	16th to Callahan	City of Bremerton	-
Segment 6	SR 303	Callahan to Sheridan	City of Bremerton	-
Segment 7	SR 303	Sheridan to Sylvan	City of Bremerton	-
Segment 8	SR 303	Sylvan to E Broad	City of Bremerton	-
Segment 9	SR 303	E Broad to Hollis	City of Bremerton	-
Segment 10	SR 303	Hollis to NE Riddell	City of Bremerton	-
Segment 11	SR 303	NE Riddell to NE Furneys	Kitsap County	-
Segment 12	SR 303	NE Furneys to NE Fuson	Kitsap County	-
Segment 13	SR 303	NE Fuson to NE McWilliams	Kitsap County	-

**INTERSECTIONS**

Intersection 1	SR 303	Burwell Street	City of Bremerton	Signalized
Intersection 2	SR 303	6th Street	City of Bremerton	Signalized
Intersection 3	SR 303	11th Street	City of Bremerton	Signalized
Intersection 4	SR 303	13th Street	City of Bremerton	Signalized
Intersection 5	SR 303	16th Street	City of Bremerton	Signalized
Intersection 6	SR 303	Callahan Drive	City of Bremerton	Unsignalized
Intersection 7	SR 303	Sheridan Road	City of Bremerton	Signalized
Intersection 8	SR 303	Sylvan Road	City of Bremerton	Signalized
Intersection 9	SR 303	E Broad Street	City of Bremerton	Signalized
Intersection 10	SR 303	Hollis Street	City of Bremerton	Signalized
Intersection 11	SR 303	NE Riddell Road	City of Bremerton	Signalized
Intersection 12	SR 303	NE Furneys Lane	Kitsap County	Signalized
Intersection 13	SR 303	NE Fuson Road	Kitsap County	Signalized
Intersection 14	SR 303	NE McWilliams Road	Kitsap County	Signalized

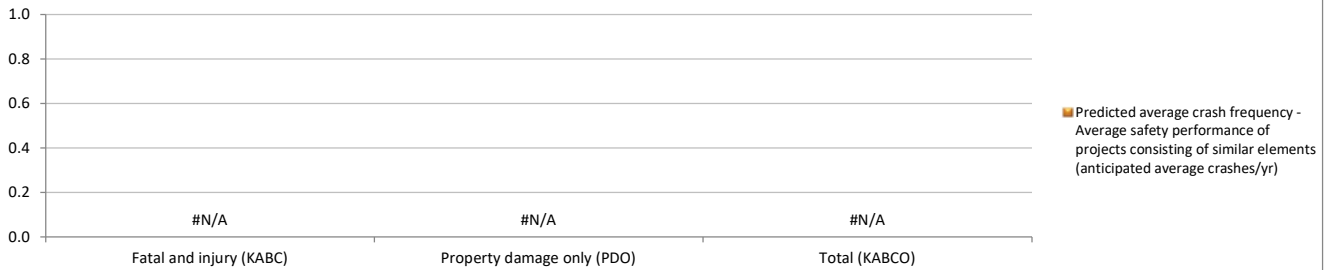
# PROJECT SAFETY PERFORMANCE SUMMARY REPORT

## General Information

Project Name	SR 303 Corridor Study
Project Description	Burwell to McWilliams
Reference Number	Traffic Management Alternative
Analyst	Emily Welter
Agency/Company	Parametrix
Contact Email	ewelter@parametrix.com
Contact Phone	(206) 838-3975
Date Completed	02/07/20

## PROJECT SUMMARY

### Summary of Anticipated Safety Performance of the Project (average crashes/yr)



Project Element	Total Crashes/yr (KABCO)	Fatal and Injury Crashes/yr (KABC)	Property Damage Only Crashes/yr (PDO)
	Predicted average crash frequency	Predicted average crash frequency	Predicted average crash frequency
	N <sub>predicted</sub> (KABCO)	N <sub>predicted</sub> (KABC)	N <sub>predicted</sub> (O)
<b>INDIVIDUAL SEGMENTS</b>			
Segment 1	1.3	0.4	0.9
Segment 2	5.7	1.9	3.8
Segment 3	2.9	0.9	2.0
Segment 4	6.0	2.0	4.1
Segment 5	10.4	2.8	7.5
Segment 6	3.0	0.9	2.2
Segment 7	21.4	6.7	14.7
Segment 8	20.7	6.5	14.2
Segment 9	5.0	1.6	3.4
Segment 10	13.4	4.2	9.2
Segment 11	9.2	2.9	6.3
Segment 12	8.2	2.3	5.9
Segment 13	14.0	3.9	10.1
<b>INDIVIDUAL INTERSECTIONS</b>			
Intersection 1	3.9	1.3	2.6
Intersection 2	5.9	2.1	3.8
Intersection 3	13.3	4.9	8.4
Intersection 4	15.9	6.0	9.9
Intersection 5	8.4	2.7	5.7
Intersection 6	#N/A	#N/A	#N/A
Intersection 7	9.2	3.4	5.7
Intersection 8	8.1	3.1	5.1
Intersection 9	7.8	2.9	4.8
Intersection 10	4.5	1.6	3.0
Intersection 11	7.3	2.7	4.5
Intersection 12	7.8	2.9	4.9
Intersection 13	7.8	2.9	4.9
Intersection 14	7.5	2.9	4.6
<b>COMBINED (sum of column)</b>	#N/A	#N/A	#N/A

## PROJECT SUMMARY -- Site-Specific EB Method Summary Results for Urban and Suburban Arterial Project

Crash severity level	N <sub>predicted</sub> (PROJECT) Predicted average crash frequency - Average safety performance of projects consisting of similar elements (anticipated average crashes/yr)
Fatal and injury (KABC)	#N/A
Property damage only (PDO)	#N/A
Total (KABCO)	#N/A

HSM11 Extended Spreadsheet for Part C Chapter 12 v.9

## Discussion of Results

Given the potential effects of project characteristics on safety performance, results indicate that:

**PROJECT SAFETY PERFORMANCE ANALYSIS INPUT SHEET**

**General Information**

Project Name	SR 303 Corridor Study	Contact Email	ewelter@parametrix.com
Project Description	Burwell to McWilliams	Contact Phone	(206) 838-3975
Reference Number	Multi-modal Alternative	Date Performed	02/12/20
Analyst	Emily Welter	Analysis Year	2040
Agency/Company	Parametrix		
# of Segments in Analysis	13	This spreadsheet calculates the predicted average crash frequency	
# of Intersections in Analysis	14		

INDIVIDUAL PROJECT ELEMENTS	LOCATION INFORMATION		JURISDICTION	INTERSECTIONS ONLY
	Route	Location Description		Signalized or Unsignalized?

**SEGMENTS**

Segment 1	SR 303	Burwell to 6th	City of Bremerton	-
Segment 2	SR 303	6th to 11th	City of Bremerton	-
Segment 3	SR 303	11th to 13th	City of Bremerton	-
Segment 4	SR 303	13th to 16th	City of Bremerton	-
Segment 5	SR 303	16th to Callahan	City of Bremerton	-
Segment 6	SR 303	Callahan to Sheridan	City of Bremerton	-
Segment 7	SR 303	Sheridan to Sylvan	City of Bremerton	-
Segment 8	SR 303	Sylvan to E Broad	City of Bremerton	-
Segment 9	SR 303	E Broad to Hollis	City of Bremerton	-
Segment 10	SR 303	Hollis to NE Riddell	City of Bremerton	-
Segment 11	SR 303	NE Riddell to NE Furneys	Kitsap County	-
Segment 12	SR 303	NE Furneys to NE Fuson	Kitsap County	-
Segment 13	SR 303	NE Fuson to NE McWilliams	Kitsap County	-

**INTERSECTIONS**

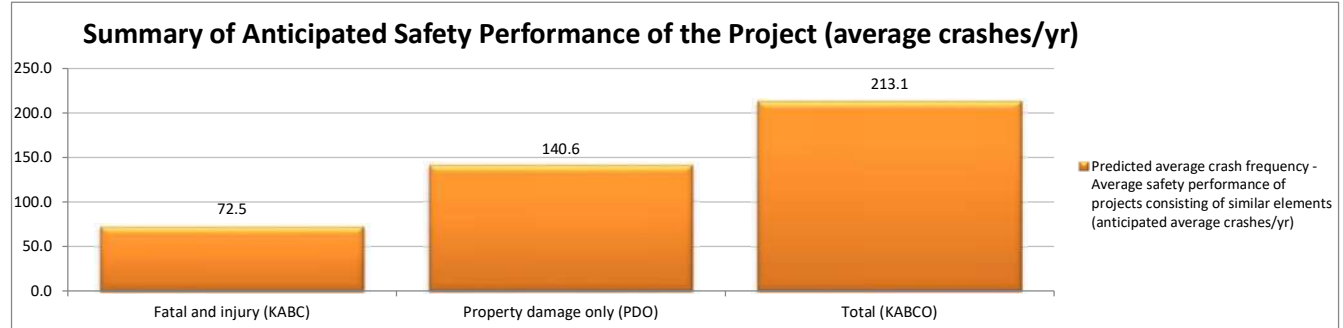
Intersection 1	SR 303	Burwell Street	City of Bremerton	Signalized
Intersection 2	SR 303	6th Street	City of Bremerton	Signalized
Intersection 3	SR 303	11th Street	City of Bremerton	Signalized
Intersection 4	SR 303	13th Street	City of Bremerton	Signalized
Intersection 5	SR 303	16th Street	City of Bremerton	Signalized
Intersection 6	SR 303	Callahan Drive	City of Bremerton	Signalized
Intersection 7	SR 303	Sheridan Road	City of Bremerton	Signalized
Intersection 8	SR 303	Sylvan Road	City of Bremerton	Signalized
Intersection 9	SR 303	E Broad Street	City of Bremerton	Signalized
Intersection 10	SR 303	Hollis Street	City of Bremerton	Signalized
Intersection 11	SR 303	NE Riddell Road	City of Bremerton	Signalized
Intersection 12	SR 303	NE Furneys Lane	Kitsap County	Signalized
Intersection 13	SR 303	NE Fuson Road	Kitsap County	Signalized
Intersection 14	SR 303	NE McWilliams Road	Kitsap County	Signalized

# PROJECT SAFETY PERFORMANCE SUMMARY REPORT

## General Information

Project Name	SR 303 Corridor Study
Project Description	Burwell to McWilliams
Reference Number	Multi-modal Alternative
Analyst	Emily Welter
Agency/Company	Parametrix
Contact Email	ewelter@parametrix.com
Contact Phone	(206) 838-3975
Date Completed	02/12/20

## PROJECT SUMMARY



Project Element	Total Crashes/yr (KABCO)	Fatal and Injury Crashes/yr (KABC)	Property Damage Only Crashes/yr (PDO)
	Predicted average crash frequency	Predicted average crash frequency	Predicted average crash frequency
	N <sub>predicted</sub> (KABCO)	N <sub>predicted</sub> (KABC)	N <sub>predicted</sub> (O)
<b>INDIVIDUAL SEGMENTS</b>			
Segment 1	1.2	0.4	0.8
Segment 2	5.0	1.7	3.3
Segment 3	2.8	0.9	1.9
Segment 4	6.0	2.0	4.1
Segment 5	10.8	2.9	7.8
Segment 6	2.9	0.8	2.1
Segment 7	10.1	3.2	6.9
Segment 8	8.6	2.7	5.8
Segment 9	2.7	0.9	1.8
Segment 10	13.1	4.1	9.0
Segment 11	9.0	2.8	6.2
Segment 12	8.1	2.3	5.8
Segment 13	13.9	3.9	10.0
<b>INDIVIDUAL INTERSECTIONS</b>			
Intersection 1	5.5	1.9	3.5
Intersection 2	5.9	2.1	3.8
Intersection 3	13.4	5.0	8.4
Intersection 4	15.9	6.0	9.9
Intersection 5	8.4	2.7	5.7
Intersection 6	8.9	3.3	5.6
Intersection 7	8.4	3.2	5.3
Intersection 8	8.9	3.4	5.5
Intersection 9	8.4	3.2	5.2
Intersection 10	4.9	1.7	3.2
Intersection 11	7.3	2.7	4.5
Intersection 12	7.8	2.9	4.9
Intersection 13	7.8	2.9	4.9
Intersection 14	7.5	2.9	4.6
<b>COMBINED (sum of column)</b>	<b>213.1</b>	<b>72.5</b>	<b>140.6</b>

## PROJECT SUMMARY -- Site-Specific EB Method Summary Results for Urban and Suburban Arterial Project

Crash severity level	N <sub>predicted</sub> (PROJECT) Predicted average crash frequency - Average safety performance of projects consisting of similar elements (anticipated average crashes/yr)
Fatal and injury (KABC)	72.5
Property damage only (PDO)	140.6
Total (KABCO)	213.1

HSM11 Extended Spreadsheet for Part C Chapter 12 v.9

## Discussion of Results

Given the potential effects of project characteristics on safety performance, results indicate that:

PROJECT SAFETY PERFORMANCE ANALYSIS INPUT SHEET				
General Information				
Project Name	SR 303 Corridor Study		Contact Email	ewelter@parametrix.com
Project Description	Burwell to McWilliams		Contact Phone	(206) 838-3975
Reference Number	Boulevard Alternative		Date Performed	02/12/20
Analyst	Emily Welter		Analysis Year	2040
Agency/Company	Parametrix			
# of Segments in Analysis	13		This spreadsheet calculates the predicted average crash frequency	
# of Intersections in Analysis	14			
INDIVIDUAL PROJECT ELEMENTS	LOCATION INFORMATION		JURISDICTION	INTERSECTIONS ONLY
	Route	Location Description		Signalized or Unsignalized?
SEGMENTS				
Segment 1	SR 303	Burwell to 6th	City of Bremerton	-
Segment 2	SR 303	6th to 11th	City of Bremerton	-
Segment 3	SR 303	11th to 13th	City of Bremerton	-
Segment 4	SR 303	13th to 16th	City of Bremerton	-
Segment 5	SR 303	16th to Callahan	City of Bremerton	-
Segment 6	SR 303	Callahan to Sheridan	City of Bremerton	-
Segment 7	SR 303	Sheridan to Sylvan	City of Bremerton	-
Segment 8	SR 303	Sylvan to E Broad	City of Bremerton	-
Segment 9	SR 303	E Broad to Hollis	City of Bremerton	-
Segment 10	SR 303	Hollis to NE Riddell	City of Bremerton	-
Segment 11	SR 303	NE Riddell to NE Furneys	Kitsap County	-
Segment 12	SR 303	NE Furneys to NE Fuson	Kitsap County	-
Segment 13	SR 303	NE Fuson to NE McWilliams	Kitsap County	-
INTERSECTIONS				
Intersection 1	SR 303	Burwell Street	City of Bremerton	Signalized
Intersection 2	SR 303	6th Street	City of Bremerton	Signalized
Intersection 3	SR 303	11th Street	City of Bremerton	Signalized
Intersection 4	SR 303	13th Street	City of Bremerton	Signalized
Intersection 5	SR 303	16th Street	City of Bremerton	Signalized
Intersection 6	SR 303	Callahan Drive	City of Bremerton	Signalized
Intersection 7	SR 303	Sheridan Road	City of Bremerton	Signalized
Intersection 8	SR 303	Sylvan Road	City of Bremerton	Signalized
Intersection 9	SR 303	E Broad Street	City of Bremerton	Signalized
Intersection 10	SR 303	Hollis Street	City of Bremerton	Signalized
Intersection 11	SR 303	NE Riddell Road	City of Bremerton	Signalized
Intersection 12	SR 303	NE Furneys Lane	Kitsap County	Signalized
Intersection 13	SR 303	NE Fuson Road	Kitsap County	Signalized
Intersection 14	SR 303	NE McWilliams Road	Kitsap County	Signalized

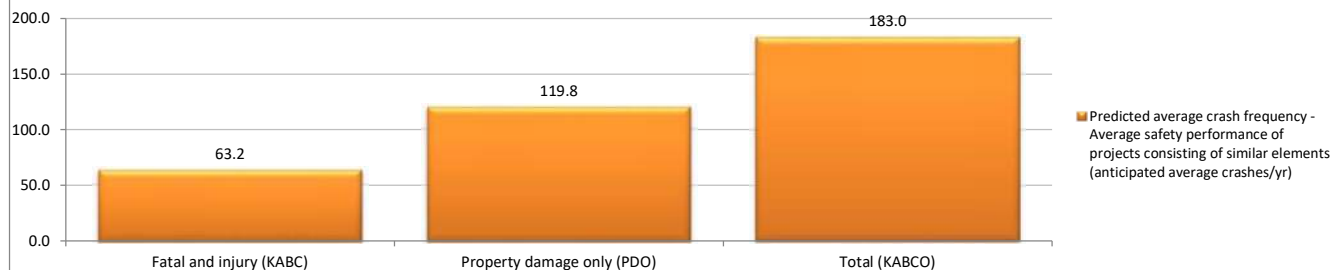
# PROJECT SAFETY PERFORMANCE SUMMARY REPORT

## General Information

Project Name	SR 303 Corridor Study
Project Description	Burwell to McWilliams
Reference Number	Boulevard Alternative
Analyst	Emily Welter
Agency/Company	Parametrix
Contact Email	ewelter@parametrix.com
Contact Phone	(206) 838-3975
Date Completed	02/12/20

## PROJECT SUMMARY

### Summary of Anticipated Safety Performance of the Project (average crashes/yr)



Project Element	Total Crashes/yr (KABCO)	Fatal and Injury Crashes/yr (KABC)	Property Damage Only Crashes/yr (PDO)
	Predicted average crash frequency	Predicted average crash frequency	Predicted average crash frequency
	N <sub>predicted</sub> (KABCO)	N <sub>predicted</sub> (KABC)	N <sub>predicted</sub> (O)
<b>INDIVIDUAL SEGMENTS</b>			
Segment 1	1.0	0.3	0.7
Segment 2	3.9	1.3	2.6
Segment 3	2.4	0.7	1.6
Segment 4	5.3	1.7	3.6
Segment 5	10.8	2.9	7.8
Segment 6	2.9	0.8	2.1
Segment 7	9.0	2.8	6.1
Segment 8	7.4	2.4	5.1
Segment 9	2.2	0.7	1.5
Segment 10	5.0	1.6	3.4
Segment 11	3.7	1.2	2.6
Segment 12	3.7	1.0	2.6
Segment 13	6.7	1.8	4.8
<b>INDIVIDUAL INTERSECTIONS</b>			
Intersection 1	5.4	1.9	3.5
Intersection 2	5.9	2.1	3.8
Intersection 3	13.3	4.9	8.4
Intersection 4	15.9	6.0	9.9
Intersection 5	8.4	2.7	5.7
Intersection 6	8.9	3.3	5.6
Intersection 7	8.4	3.2	5.3
Intersection 8	8.9	3.4	5.5
Intersection 9	8.3	3.2	5.2
Intersection 10	4.7	1.6	3.1
Intersection 11	7.5	2.8	4.7
Intersection 12	8.0	3.0	5.0
Intersection 13	7.9	3.0	4.9
Intersection 14	7.6	2.9	4.7
<b>COMBINED (sum of column)</b>	<b>183.0</b>	<b>63.2</b>	<b>119.8</b>

## PROJECT SUMMARY -- Site-Specific EB Method Summary Results for Urban and Suburban Arterial Project

Crash severity level	N <sub>predicted</sub> (PROJECT) Predicted average crash frequency - Average safety performance of projects consisting of similar elements (anticipated average crashes/yr)
Fatal and injury (KABC)	63.2
Property damage only (PDO)	119.8
Total (KABCO)	183.0

HSM1 Extended Spreadsheet for Part C Chapter 12 v.9

## Discussion of Results

Given the potential effects of project characteristics on safety performance, results indicate that:

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## Appendix L-3

### Future Build Alternatives Traffic Operations Results



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Arterial Level of Service: NB Warren Avenue (SR 303)

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
6th Street	III	30	21.5	24.4	45.9	0.16	12.6	E
11th Street	III	30	32.7	68.4	101.1	0.26	9.2	F
13th Street	III	30	17.0	85.7	102.7	0.12	4.2	F
16th Street	III	30	25.9	9.8	35.7	0.20	20.5	C
Total	III		97.1	188.3	285.4	0.74	9.4	F

Arterial Level of Service: SB Warren Avenue (SR 303)

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
16th Street	III	32	98.5	18.7	117.2	0.88	27.2	B
13th Street	III	30	25.9	12.7	38.6	0.20	19.0	C
11th Street	III	30	17.0	48.5	65.5	0.12	6.6	F
6th Street	III	30	32.7	84.3	117.0	0.26	7.9	F
Burwell Street (SR 3	III	30	21.5	69.3	90.8	0.16	6.4	F
Total	III		195.6	233.5	429.1	1.63	13.6	E

Arterial Level of Service: NB Wheaton Way (SR 303)

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Sheridan Road	III	32	98.5	72.4	170.9	0.88	18.6	C
Sylvan Way	III	30	63.9	12.6	76.5	0.50	23.7	C
E Broad Street	III	30	50.2	9.3	59.5	0.39	23.9	C
Hollis Street	III	30	12.5	3.2	15.7	0.09	20.3	C
NE Riddell Road	III	30	37.7	30.6	68.3	0.30	15.6	D
NE Furneys Lane	III	30	27.8	47.0	74.8	0.22	10.5	E
NE Fuson Road	III	40	28.6	12.4	41.0	0.28	24.6	B
NE McWilliams Road	III	40	46.6	67.8	114.4	0.50	15.8	D
Total	III		365.8	255.3	621.1	3.17	18.4	C

Arterial Level of Service: SB Wheaton Way (SR 303)

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
NE McWilliams Road	III	40	19.9	55.4	75.3	0.17	8.3	F
NE Fuson Road	III	40	46.6	11.6	58.2	0.50	31.0	A
NE Furneys Lane	III	40	28.6	15.6	44.2	0.28	22.8	C
NE Riddell Road	III	30	27.8	24.5	52.3	0.22	15.1	D
Hollis Street	III	30	37.7	5.3	43.0	0.30	24.8	B
E Broad Street	III	30	12.5	19.0	31.5	0.09	10.1	E
Sylvan Way	III	30	50.2	36.5	86.7	0.39	16.4	D
Sheridan Road	III	30	63.9	28.7	92.6	0.50	19.5	C
Total	III		287.2	196.6	483.8	2.46	18.3	C

Multi-Modal Alt 2040 PM - Callahan Add Lane  
SR 303 Corridor Study

Arterial Level of Service

Arterial Level of Service: NB Warren Avenue (SR 303)

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
6th Street	III	30	21.5	23.3	44.8	0.16	12.9	E
11th Street	III	30	32.7	120.9	153.6	0.26	6.0	F
13th Street	III	30	17.0	66.3	83.3	0.12	5.2	F
16th Street	III	30	25.9	7.9	33.8	0.20	21.7	C
Total	III		97.1	218.4	315.5	0.74	8.5	F

Arterial Level of Service: SB Warren Avenue (SR 303)

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
16th Street	III	34	69.7	18.6	88.3	0.65	26.5	B
13th Street	III	30	25.9	15.1	41.0	0.20	17.9	D
11th Street	III	30	17.0	80.4	97.4	0.12	4.5	F
6th Street	III	30	32.7	27.6	60.3	0.26	15.4	D
Burwell Street (SR 3	III	30	21.5	60.7	82.2	0.16	7.0	F
Total	III		166.8	202.4	369.2	1.39	13.6	E

Arterial Level of Service: NB Wheaton Way (SR 303)

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
Clare Avenue	III	33	71.6	80.6	152.2	0.65	15.4	D
Sheridan Road	III	30	29.8	63.3	93.1	0.23	9.1	F
Sylvan Way	III	30	63.9	9.1	73.0	0.50	24.8	B
E Broad Street	III	30	50.2	6.7	56.9	0.39	25.0	B
Hollis Street	III	30	12.5	5.4	17.9	0.09	17.8	D
NE Riddell Road	III	30	37.7	39.7	77.4	0.30	13.8	E
NE Furneys Lane	III	30	27.8	40.2	68.0	0.22	11.6	E
NE Fuson Road	III	40	28.6	12.4	41.0	0.28	24.6	B
NE McWilliams Road	III	40	46.6	67.8	114.4	0.50	15.8	D
Total	III		368.7	325.2	693.9	3.17	16.4	D

Arterial Level of Service: SB Wheaton Way (SR 303)

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
NE McWilliams Road	III	40	19.9	55.4	75.3	0.17	8.3	F
NE Fuson Road	III	40	46.6	11.6	58.2	0.50	31.0	A
NE Furneys Lane	III	40	28.6	15.6	44.2	0.28	22.8	C
NE Riddell Road	III	30	27.8	24.8	52.6	0.22	15.0	D
Hollis Street	III	30	37.7	8.2	45.9	0.30	23.3	C
E Broad Street	III	30	12.5	21.9	34.4	0.09	9.3	F
Sylvan Way	III	30	50.2	34.7	84.9	0.39	16.7	D
Sheridan Road	III	30	63.9	61.3	125.2	0.50	14.5	D
Callahan Drive	III	30	29.8	16.2	46.0	0.23	18.3	C
Total	III		317.0	249.7	566.7	2.69	17.1	D

Arterial Level of Service: NB Warren Avenue (SR 303)

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
6th Street	III	30	21.5	46.2	67.7	0.16	8.6	F
11th Street	III	30	32.7	112.9	145.6	0.26	6.4	F
13th Street	III	30	17.0	66.4	83.4	0.12	5.2	F
16th Street	III	30	25.9	7.9	33.8	0.20	21.7	C
Total	III		97.1	233.4	330.5	0.74	8.1	F

Arterial Level of Service: SB Warren Avenue (SR 303)

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
16th Street	III	32	98.5	18.6	117.1	0.88	27.2	B
13th Street	III	30	25.9	15.1	41.0	0.20	17.9	D
11th Street	III	30	17.0	80.4	97.4	0.12	4.5	F
6th Street	III	30	32.7	38.7	71.4	0.26	13.0	E
Total	III		174.1	152.8	326.9	1.47	16.1	D

Arterial Level of Service: NB Wheaton Way (SR 303)

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
NE Furneys Lane	III	30	27.8	83.2	111.0	0.22	7.1	F
NE Fuson Road	III	40	28.6	9.9	38.5	0.28	26.2	B
Total	III		56.4	93.1	149.5	0.50	12.0	E

Arterial Level of Service: SB Wheaton Way (SR 303)

Cross Street	Arterial Class	Flow Speed	Running Time	Signal Delay	Travel Time (s)	Dist (mi)	Arterial Speed	Arterial LOS
NE Fuson Road	II	40	46.6	18.0	64.6	0.50	27.9	C
NE Furneys Lane	II	40	28.6	17.5	46.1	0.28	21.9	D
Total	II		75.2	35.5	110.7	0.78	25.4	C

# ROUTE TRAVEL PERFORMANCE

Route: R101 [Segment 2-3]

Network: N101 [SR 303  
Segment 2-3]

New Route  
Network Category: (None)

Route Travel Performance			
Performance Measure	Vehicles	Per Unit Distance	Persons
Travel Speed (Average)	26.2 mph		26.2 mph
Travel Distance (Average)	14061.7 ft		14061.7 ft
Travel Time (Average)	366.0 sec	137.4 sec/mi	366.0 sec
Route Delay (Average)	116.5 sec	43.7 sec/mi	116.5 sec
Route Stop Rate	6.95	2.61 per mi	6.95
Desired Speed	40.0 mph		
Route Level of Service (LOS)	LOS C		
Travel Time Index	6.16		
Speed Efficiency	0.65		
Congestion Coefficient	1.53		

Route Travel Movement Performance											
Mov ID	Turn	Trav Dist ft	Trav Time sec	Aver. Speed mph	Aver. Delay sec	Prop. Queued	Eff. Stop Rate	Aver. No. Cycles	Dem. Flow Rate veh/h	Arv. Flow Rate veh/h	Deg. of Satn
Site ID: 5 Site Name: 16th Street Sig											
South Approach											
8	T1	1060.0	29.3	24.7	11.2	0.51	0.49	0.51	2615	2615	0.865
Site ID: 15 Site Name: Callahan Drive RAB											
South Approach											
8	T1	3503.2	69.1	34.6	7.8	0.80	0.66	0.90	2505	2505	0.934
Site ID: 6 Site Name: Sheridan Street RAB											
South Approach											
8	T1	1508.2	85.3	12.1	58.8	1.00	2.38	4.29	2230	2230	1.093
Site ID: 7 Site Name: Sylvan Way RAB											
South Approach											
8	T1	2668.1	64.4	28.2	18.2	1.00	1.37	2.01	2115	1966	0.967
Site ID: XX Site Name: E Broad Street RAB											
South Approach											
8	T1	2154.5	45.7	32.1	5.4	0.73	0.53	0.73	2215	2087	0.822
Site ID: 8 Site Name: Hollis Street RAB											
South Approach											
8	T1	503.1	17.0	20.2	5.3	0.67	0.51	0.67	2195	2075	0.762
Site ID: 9 Site Name: NE Riddell Road RAB											
South Approach											
8	T1	2664.6	55.2	32.9	9.8	0.87	1.00	1.21	1885	1790	0.843

# ROUTE TRAVEL PERFORMANCE

Route: R101 [Segment 4]

Network: N101 [SR 303 Segment 4]

New Route  
Network Category: (None)

Route Travel Performance			
Performance Measure	Vehicles	Per Unit Distance	Persons
Travel Speed (Average)	26.3 mph		26.3 mph
Travel Distance (Average)	5764.6 ft		5764.6 ft
Travel Time (Average)	149.5 sec	137.0 sec/mi	149.5 sec
Route Delay (Average)	51.9 sec	47.5 sec/mi	51.9 sec
Route Stop Rate	1.93	1.77 per mi	1.93
Desired Speed	40.0 mph		
Route Level of Service (LOS)	LOS C		
Travel Time Index	6.19		
Speed Efficiency	0.66		
Congestion Coefficient	1.52		

Route Travel Movement Performance											
Mov ID	Turn	Trav Dist ft	Trav Time sec	Aver. Speed mph	Aver. Delay sec	Prop. Queued	Eff. Stop Rate	Aver. No. Cycles	Dem. Flow Rate veh/h	Arv. Flow Rate veh/h	Deg. of Satn
Site ID: 11											
Site Name: NE Fuson Sig											
South Approach											
8	T1	1398.0	63.9	14.9	40.0	0.89	0.84	0.89	2030	2030	0.905
Site ID: 12											
Site Name: McWilliams Road RAB											
South Approach											
8	T1	4366.6	85.6	34.8	11.8	0.85	1.09	1.37	1715	1709	0.903

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## Appendix L-4

### Future Build Alternatives Economic Impact Summary



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# Potential Economic Vitality Impacts of SR 303 Corridor Alternatives

September 22, 2020

## INTRODUCTION

### Background and Purpose

State Route 303 (SR 303) is a state highway in Kitsap County connecting Bremerton to Silverdale. It serves as a primary transportation corridor for Bremerton Shipyard workers, other businesses within Bremerton, and connects the residential communities along the corridor and beyond to the Bremerton Ferry Terminal, providing access to Seattle.

The City of Bremerton and the Washington State Department of Transportation (WSDOT) have launched a comprehensive corridor study, looking at the segment between Burwell Street to McWilliams. Livability, safety, and economic vitality are common areas for improvement highlighted by the City, the public, and business owners along the SR 303 corridor.

Community Attributes was commissioned to conduct a baseline economic assessment of the corridor, which was completed in the first phase of this study and provided to the City as a separate deliverable. As part of the second phase, the project team developed a set of proposed improvements to the SR 303 corridor which were grouped into three Build Alternatives. CAI assessed the potential impacts of the Build Alternatives on economic vitality and provided measurements of mobility impacts for the preferred corridor alternative. This report presents a summary of the analysis and findings from this assessment.

### Methods

The economic vitality impacts assessment begins with an analysis of the development that has occurred over time within the specific study area. This includes an inventory of relevant parcel data for the study area by land use, an analysis of property value growth trends, concentrations of vacant and underutilized land, and age of improvements. This analysis forms the basis of the discussion of real estate development potential and trajectories for the SR 303 corridor.

This report also presents the results of a screening evaluation of the different corridor alternatives against potential economic benefits for the area. A matrix of potential economic benefits of proposed improvements to the SR 303 corridor was developed and alternatives were ranked in order of benefit.

Finally, the report includes an assessment of the impact of the preferred Build Alternative on accessibility to jobs and non-work destinations.

## Organization of Report

The remainder of this report is organized as follows:

- **Key Findings.** Provides a summary of the key findings.
- **SR 303 Study Area Development Potential.** Includes an assessment of the type, character, location and intensity of development that has occurred over time along the corridor and discussion of trajectories and development potential.
- **Potential Impacts of Build Alternatives on Economic Vitality.** Provides the outcome of an evaluation process of each proposed Build Alternative impact on economic vitality.
- **Potential Mobility Impacts of Preferred Build Alternative.** Provide measurements of the impact of proposed corridor improvements to accessibility to jobs and non-work destinations.

## KEY FINDINGS

- Land use patterns vary along the SR 303 corridor. The segments south of Sheridan Road are a mix of single-family residential and small office and commercial parcels. Segments 3 and 4 to the north are dominated by large-format, auto-oriented standalone and strip commercial development and shopping centers.
- Property values corridor-wide have experienced a decline following the Great Recession and have since recovered but remain below their pre-recession levels. While property values for the overall corridor as well as segments 1 and 3 gained in value between 2013 and 2020, segments 2 and 4 declined in value.
- There is modest development potential in the southern corridor via the intensification of uses on built commercial properties and parking lots near downtown.
- In contrast, the north end of the SR 303 corridor presents a great deal of both new development and redevelopment potential, with large vacant parcels available along the corridor such as the now-defunct old East Bremerton High School.
- The Multimodal alternative ranked highest overall in terms of potential economic benefits, with the Boulevard alternative coming in second.
- Improving transit reliability and pedestrian and bicycle connections along the corridor can reduce commute times, with positive effects on productivity; this can benefit local businesses and have a positive impact on quality of life for residents in the area.

## SR 303 STUDY AREA DEVELOPMENT POTENTIAL

### Land Use and Market Trends by Corridor Segment

This section will use data, including land use, property value growth trends, concentrations of vacant and underutilized land, and age of improvements to qualitatively describe and infer the type, character, location, and intensity of development that has occurred over time in each of the study corridor segments. This will set up conclusions on trajectories and potential in the next subsection. The analysis includes parcels located within 500 feet of the SR 303 centerline within the study area.

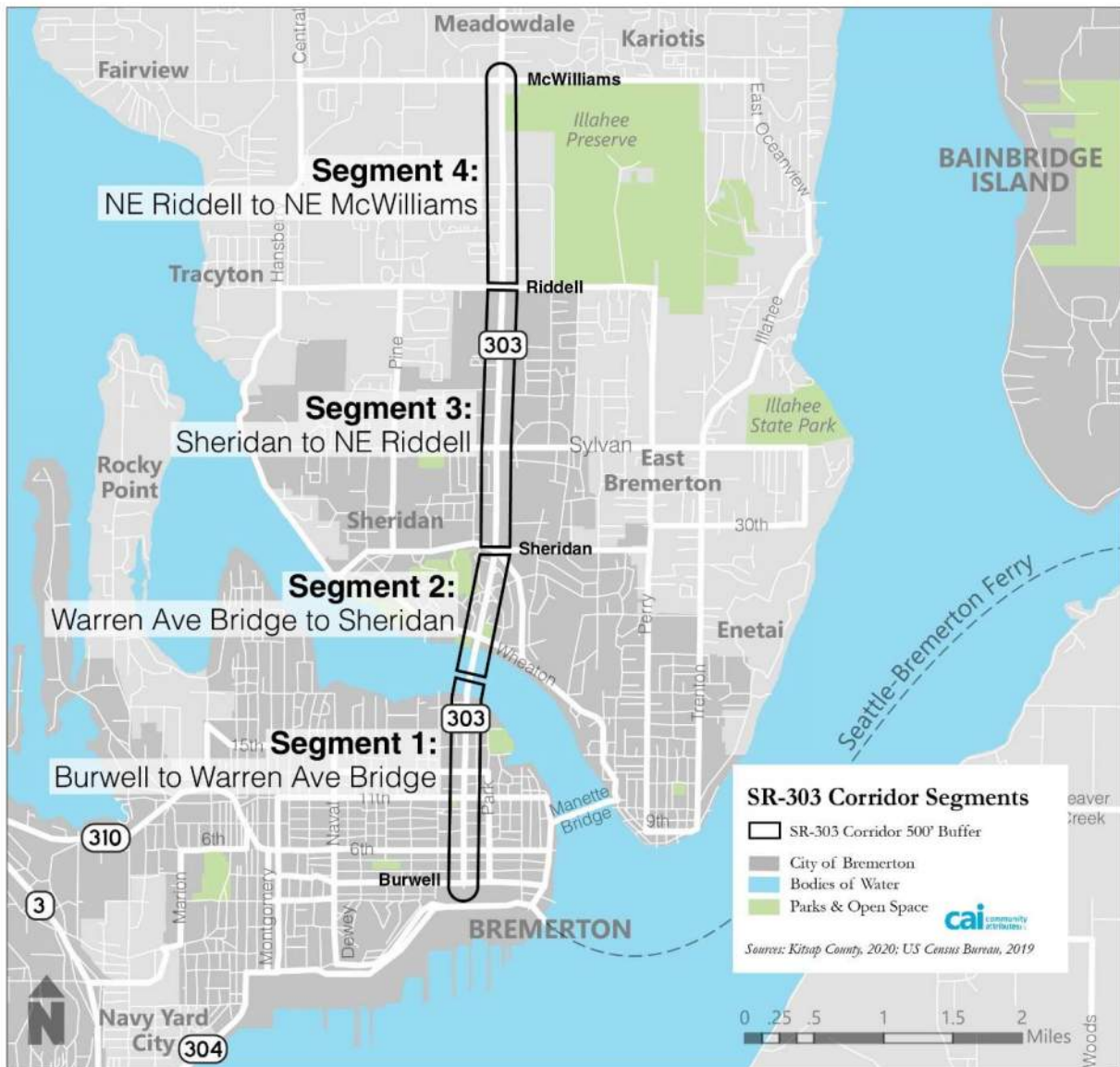
#### General Description of Corridor Segments

For this study, transportation improvements will be evaluated by segment, as context changes considerably along the length of the corridor within the study area (**Exhibit 1**).

The segments, from south to north, are as follows:

1. **Burwell Street to Warren Ave Bridge.** This segment of SR 303 through downtown Bremerton north of the Shipyard is known locally as Warren Avenue; it extends to the bridge and includes residential and small commercial properties and the Olympic College Campus.
2. **Warren Ave. Bridge to Sheridan Road.** This next segment runs from the Warren Ave. Bridge north to Sheridan Road. This segment includes Harrison Medical Center and Stephenson Canyon recreation area and greenway.
3. **Sheridan Road to NE Riddell Road.** This segment includes the sprawling former Old East Bremerton High School site, View Ridge Elementary Arts Academy, as well as auto-oriented commercial uses and single- and multifamily residential properties.
4. **NE Riddell Road to NE McWilliams Road.** In addition to more auto-oriented, strip and chain commercial, this final segment includes “big box” uses such as Lowe’s and Fred Meyer. This segment abuts the large Illahee Preserve.

**Exhibit 1: Corridor Segments Overview, 2020**



Source: Kitsap County Assessor, 2008-2020; Community Attributes, Inc., 2020.

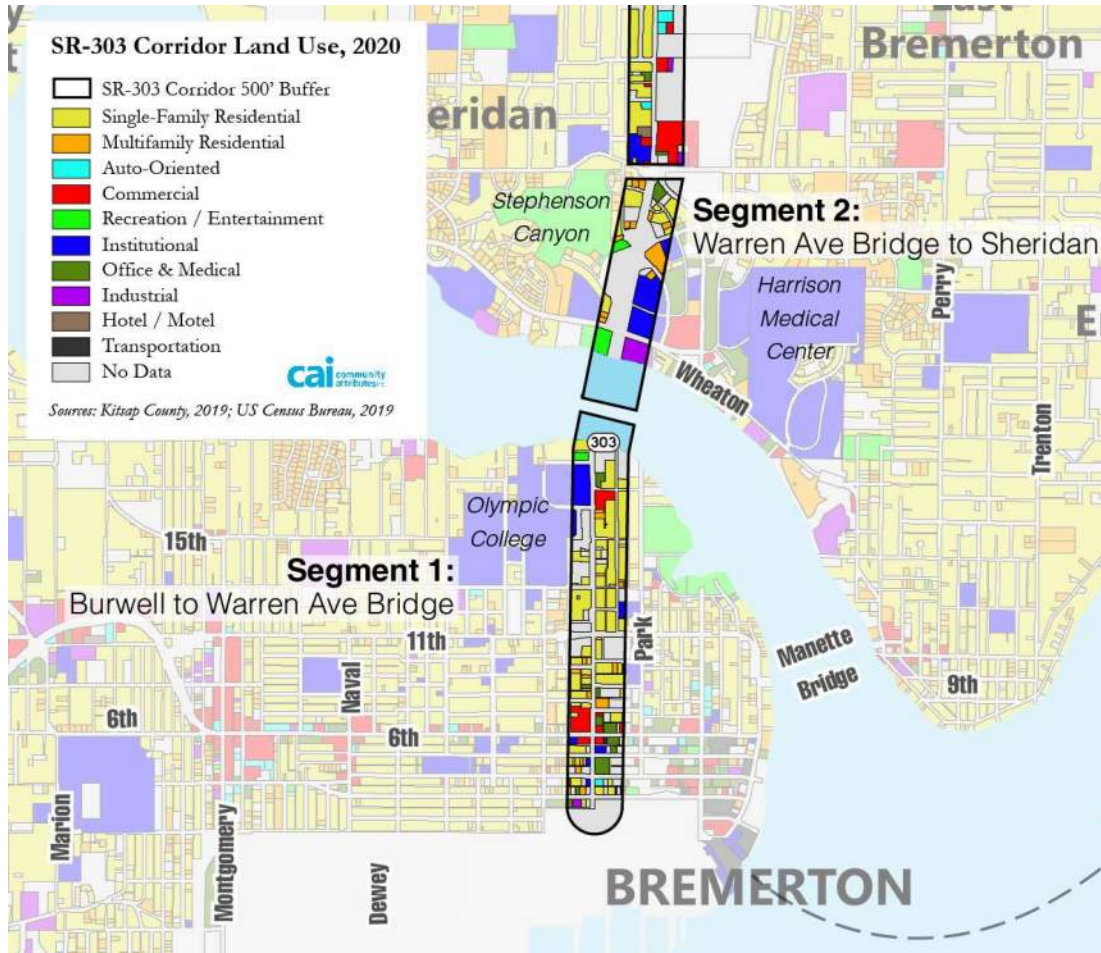
## Corridor Land Use Patterns

**Segment 1** of the corridor study area, from the Bremerton Naval Shipyard and Burwell Street up to the Warren Ave Bridge is comprised mainly of downtown Bremerton and the Olympic College campus. The downtown zone nearest Burwell contains several small-scale commercial and institutional uses, including churches, a bank and credit union, a masonic temple, a community center, and a few restaurants (**Exhibits 2 & 3**).

This zone transitions into single family housing around 8<sup>th</sup> Street, near the South Court Apartments. On the east side of the corridor, the homes continue

up to 17<sup>th</sup>, while on the west side, Olympic College and its surface parking lots constitute the majority of lots. In addition to Olympic College, Washington State University Bremerton also has a site on 17<sup>th</sup> Street. This segment of 303 / Warren Ave. also includes two parks – Warren Ave Playfield on 11<sup>th</sup>, and Lower Roto Vista Park near the bridge.

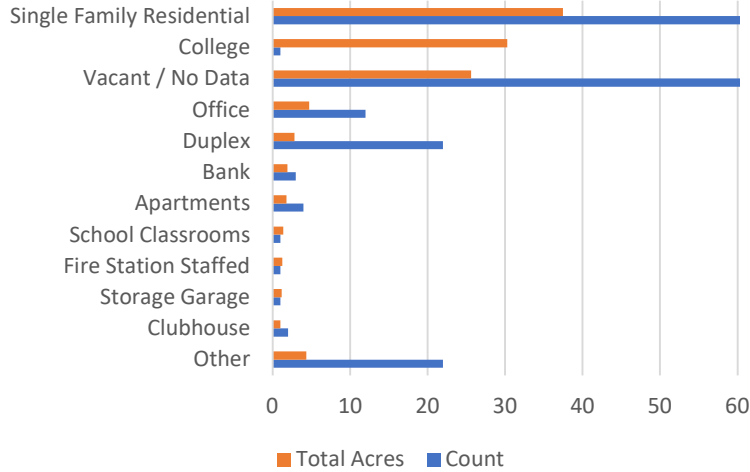
**Exhibit 2: Corridor Segments 1 & 2 Generalized Land Use, 2020**



Source: Kitsap County Assessor, 2008-2020; Community Attributes, Inc., 2020.

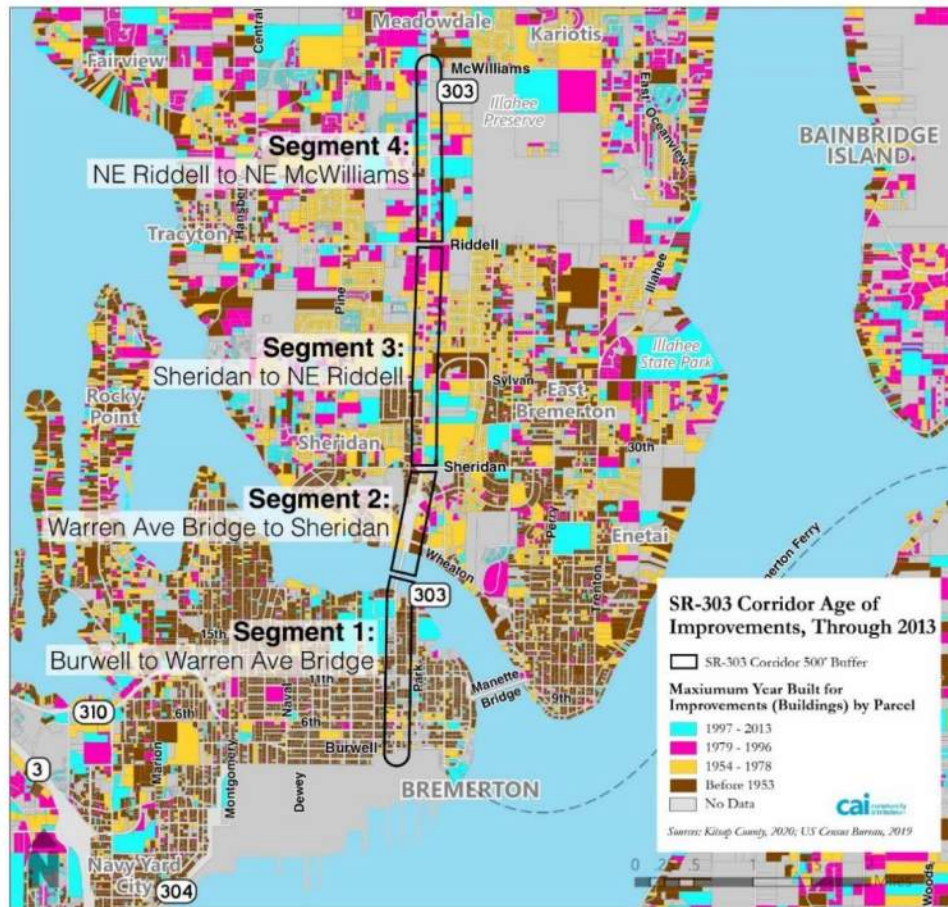
Nearly all single-family homes in this segment were built prior to 1953 (**Exhibit 4**). Apart from sections of the Olympic College campus which were built as late as 2008 and an office on 8<sup>th</sup>, no recent development has occurred in this segment.

### Exhibit 3: Detailed Land Use, BIRT Study Area Segment 1, 2020



Source: Kitsap County Assessor, 2008-2020; Community Attributes, Inc., 2020.

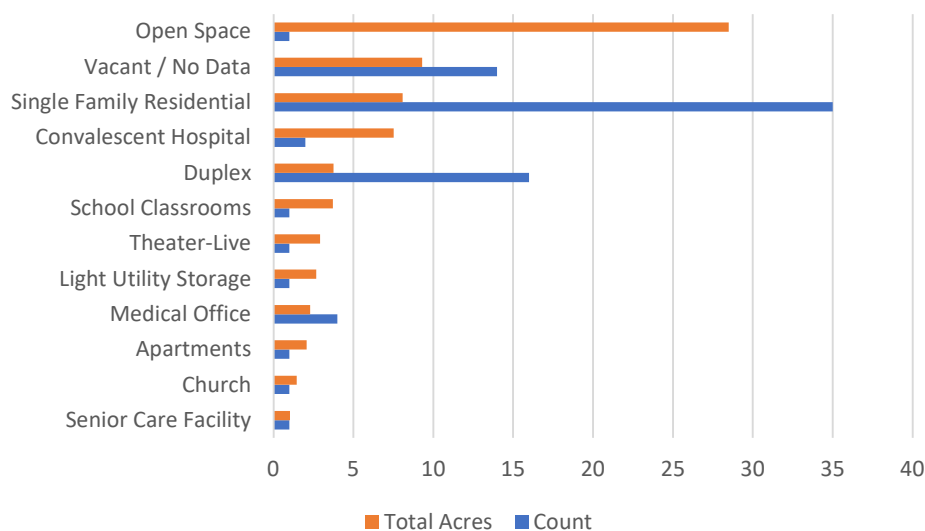
### Exhibit 4: Age of Corridor Improvements, Through 2013



Source: Kitsap County Assessor, 2008-2013; Community Attributes, Inc., 2020.

**Segment 2** of the corridor study area, from the Warren Avenue Bridge north to Sheridan Road is called Wheaton Way locally, with a number of other medical, dental, senior living, and rehab centers and offices having co-located around Harrison on both sides of the corridor (**Exhibits 2 & 5**). Additionally, the segment abuts Stephenson Canyon open space area to the west, and a great deal of direct corridor frontage also comprises a highway interchange. Just north of the bridge lie the Sheridan Park Community Center and the Bremerton Community Theatre. A church, some multifamily housing, and single-family housing near Sheridan make up the balance of land uses in this segment.

**Exhibit 5: Detailed Land Use, BIRT Study Area Segment 2, 2020**



*Source: Kitsap County Assessor, 2008-2020; Community Attributes, Inc., 2020.*

While the single-family housing is again of pre-1953 vintage, most of the local medical offices date to the 60's through the 80's; two medical offices off Hemlock were built more recently, around 2000. The Bridge Waterfront Townhomes were built in 2005 (**Exhibit 4**).

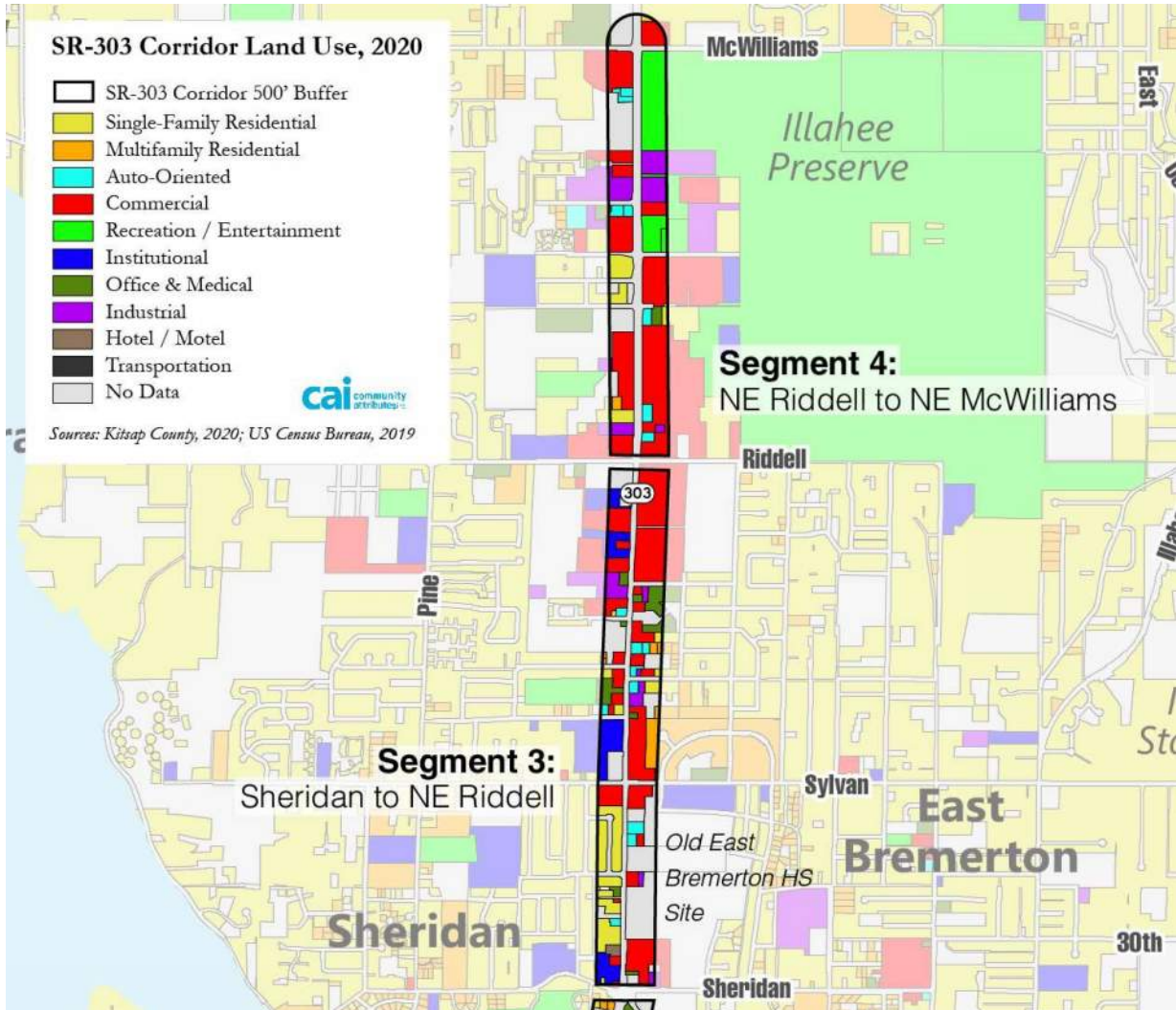
In **Segment 3** of the corridor study area, from Sheridan Road north to NE Riddell Road, the mix of land uses changes. Larger-format commercial dominates the segment, mixed with sections of multifamily housing and a handful of institutional uses, such as View Ridge Elementary Arts Academy, and the Kitsap Filipino-American Community Center (**Exhibits 6 & 7**). The only single-family housing in this segment is found between the Sheridan Plaza strip mall and the Walgreens at Sylvan Way.

Auto-oriented general commercial, restaurant, and office uses in this segment include chains such as Starbuck's, Papa John's, and McDonald's, and five different strip malls and shopping centers including the Wheaton Mall. This

segment also contains a large redevelopment site located at old East Bremerton High School, which was largely demolished in 2018.

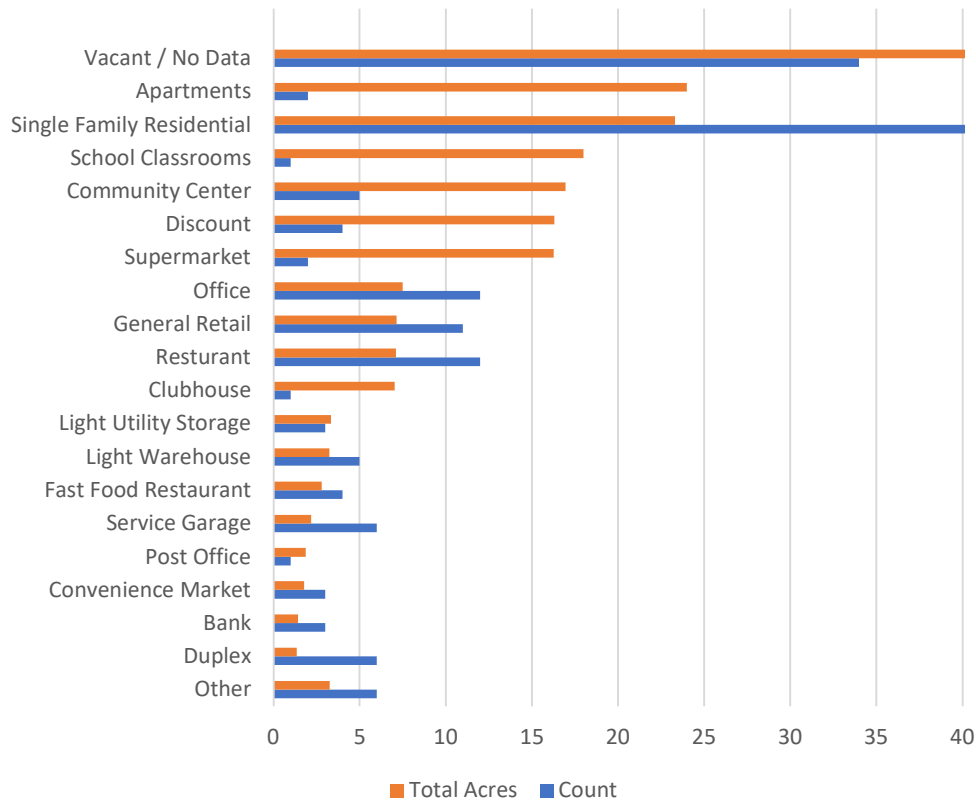
The Albertons at Sheridan and parts of the View Ridge School site were built in the early 2000's, but the rest of the commercial structures in the corridor were built from the 50's to the 90's, and the single-family housing largely pre-dates 1953 (**Exhibit 4**).

**Exhibit 6: Corridor Segments 3 & 4 Generalized Land Use, 2020**



*Source: Kitsap County Assessor, 2008-2020; Community Attributes, Inc., 2020.*

### Exhibit 7: Detailed Land Use, BIRT Study Area Segment 3, 2020

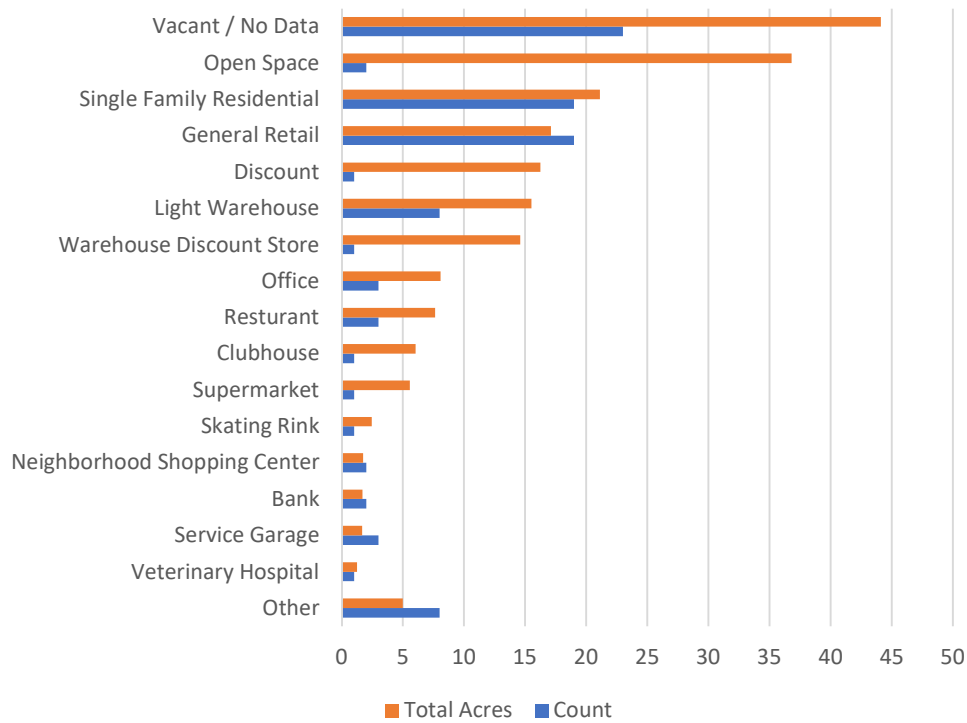


Source: Kitsap County Assessor, 2008-2020; Community Attributes, Inc., 2020.

**Segment 4** of the corridor study area is comprised of “big box” retailers such as Lowe’s, Fred Meyer, and Safeway as well as continued larger-format auto-oriented retail stores and shopping centers. Very little single-family housing fronts Wheaton Way / 303 in this segment. At the north end, near McWilliams, the nearly 500-acre Illahe Nature Preserve open space area abuts the corridor and backs up to the commercial uses on the east side. In addition, Segment 4 includes self-storage uses, two gas stations, a Park n’ Ride, and a driver licensing center. (**Exhibits 6 & 8**)

In this segment, improvements overall are newer, with Lowe’s and Fred Meyer among the most recently built (2002 & 2012, respectively); numerous other commercial structures date from the 80’s and 90’s (**Exhibit 4**). Only the single-family housing pre-dates the 1950’s here.

### Exhibit 8: Detailed Land Use, BIRT Study Area Segment 4, 2020

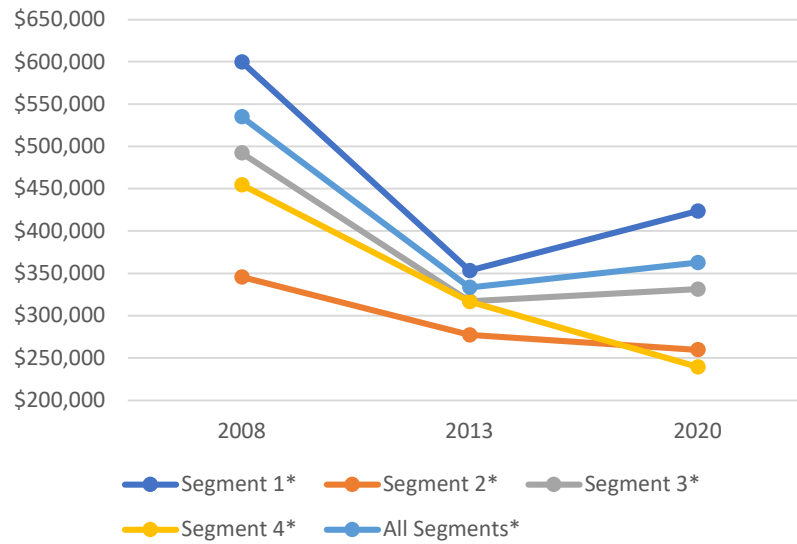


Source: Kitsap County Assessor, 2008-2020; Community Attributes, Inc., 2020.

### Trends in Property Valuation

The Great Recession period from 2008 to approximately 2011 impacted valuation and development in the study area corridor greatly. Corridor-wide, for all properties that intersect a 500-foot buffer either side of Wheaton Way / SR-303, the average assessed land value per acre declined from just over \$535,000 in 2008 to a little over \$333,000 by 2013. This represents a nearly 38% reduction in average land value per acre during that period (**Exhibit 9**).

### Exhibit 9: Average Assessed Land Value per Acre, 2008, 2013, 2020



Source: Kitsap County Assessor, 2008-2020; Community Attributes, Inc., 2020.

Since the Great Recession, property values have rebounded somewhat but have not attained their pre-recession heights to date. Overall land values corridor-wide experienced a compound annual growth rate (CAGR) of .7% from 2013 – 2020, with an average of almost \$363,000 per acre according to the most recent (2020) assessor's data (**Exhibit 10**).

However, while property values for the overall corridor as well as segments 1 and 3 gained in value over this period (2013 – 2020), it is notable that segments 2 and 4 declined in value. Segment 2, from the Warren Ave Bridge to Sheridan Road declined by .5% annually (CAGR), and segment 4 declined by 2.3% annually (**Exhibit 10**).

### Exhibit 10: Average Assessed Land Value per Acre Growth (CAGR), 2013-2020

	2013	2020	CAGR
Segment 1*	\$353,384	\$423,404	1.5%
Segment 2*	\$277,075	\$259,695	-0.5%
Segment 3*	\$317,177	\$331,333	0.4%
Segment 4*	\$316,412	\$239,527	-2.3%
<b>All Segments*</b>	<b>\$333,557</b>	<b>\$362,811</b>	<b>0.7%</b>

Source: Kitsap County Assessor, 2008-2020; Community Attributes, Inc., 2020.

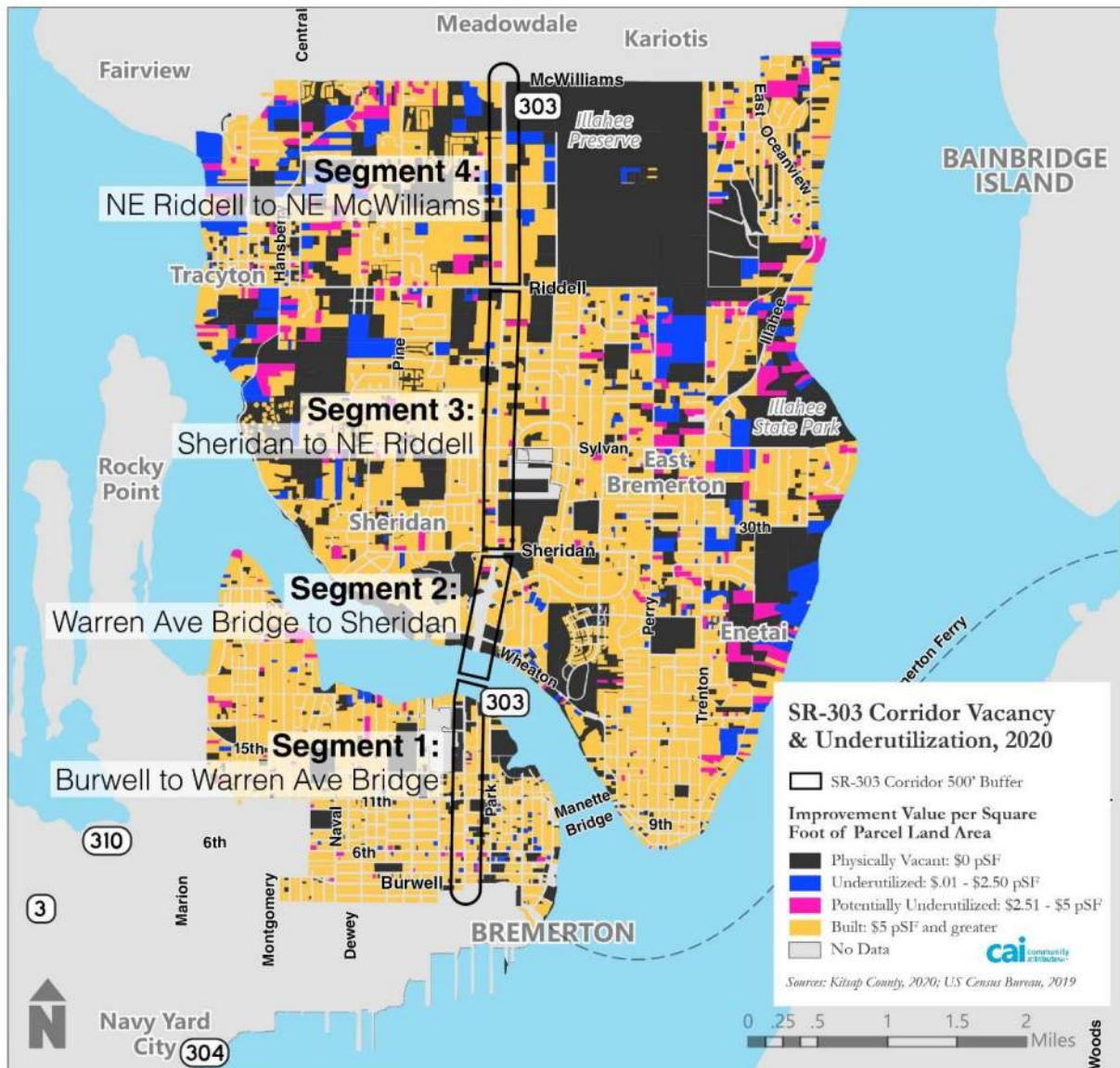
\* Parcels located within 500 feet of the SR 303 centerline with a unique tax account and with a non-zero land area and land value were selected for analysis.

Note: For 2020 data, 83 (9%) fewer tax accounts were available for analysis than in 2008 due to lack of land valuation figures in places - including some large significant parcels such as Olympia College, the old East Bremerton High School site, and View Ridge Elementary.

## Vacancy and Underutilization

In **Segment 1**, average lot sizes are small, around a third of an acre on average after discounting the Olympic College and Shipyard parcels. Most physical vacancy in this segment consists of surface parking lots for Olympic College, open space such as Warren Ave Playfield and Lower Roto Vista Park, and an electrical substation east of Warren on 11<sup>th</sup>. Additionally, a handful of underutilized commercial parcels exist in the downtown portion of the corridor (**Exhibit 11**).

**Exhibit 11: Vacant & Underutilized Concentrations, All Segments, 2020**



Source: Kitsap County Assessor, 2008-2020; Community Attributes, Inc., 2020.

Average parcel sizes in **Segment 2** are larger, around two-thirds of an acre discounting the Stephenson Canyon parcels. A few mid-sized vacant lots exist here along Wheaton Way, including two at the waterfront and an approximately 7.5-acre parcel at Sheridan. Only two potentially underutilized parcels are found in this segment.

In **Segment 3**, average parcel sizes approach one acre. Several large vacant parcels exist in this segment – most notably the school district’s old East Bremerton High School parcel on the east side of the corridor around Spruce Street. Two other large vacant parcels – around 20 acres each – can be found abutting NE Riddell Street east and west of the corridor, behind the commercial uses fronting 303. Another half dozen smaller vacant parcels exist between Sylvan Way and Hollis Street, though half of them are surface parking lots for existing commercial uses.

**Segment 4** parcels are larger, on average, than those in the other segments at around 1.7 acres. Significant vacancy and underutilization exist in this segment, with the largest vacant parcel around 50 acres found behind the Safeway at the northeast corner of 303 and McWilliams. An approximately 10-acre vacant property is found behind Fred Meyer here. Another ten large vacant and underutilized parcels are in this segment, largely behind commercial uses directly fronting SR-303.

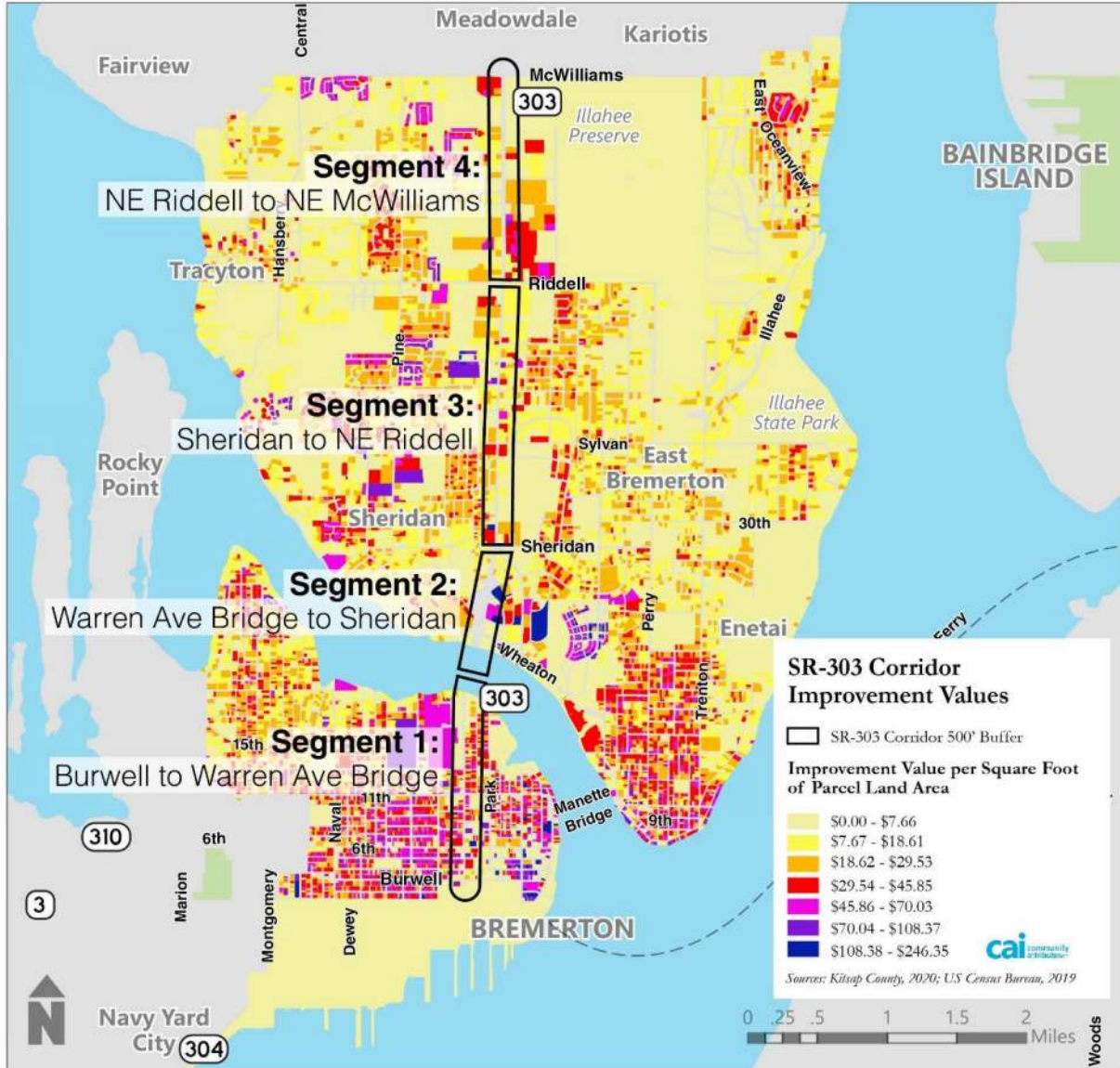
## **Development Trajectories and Potential by Segment**

### **Segment 1**

The development trajectory of this area is rather fixed as the segment is mostly built out. The segment consists of a neighborhood retail and services node in the lower, downtown area, single-family housing in the upper corridor, and college campus development in the upper corridor. Vacancy and underutilization are low, and little vacant developable land exists here. Average property values are highest in this segment.

**Exhibit 12** shows improvement value per square foot of land ratios – a proxy for the relative value of development. By this measure, the mostly small, centrally located downtown commercial, residential, and institutional lots of this segment are relatively high value. This makes it more unlikely that built lots here would be redeveloped. The greatest development potential here probably lies in the intensification of uses on built commercial properties and parking lots in the lower corridor downtown area.

**Exhibit 12. Study Area Improvement Value per SF of Land, 2020**



Source: Kitsap County Assessor, 2008-2020; Community Attributes, Inc., 2020.

## Segment 2

Slightly more potential for new development and / or redevelopment exists in Segment 2. The development trajectory of this area has been mixed. Property values are lower here than all but Segment 4, the unincorporated county portion of the corridor. A highway interchange dominates the frontage in the center of the segment, but vacant land near the waterfront and Sheridan Street exists and has already seen some recent multifamily development. The major institutional anchor of Harrison Medical Center has determined the fate of much of the development up to this point in the segment, both east and

west of the corridor, with numerous medical and dental offices, rehabilitation centers, and specialist offices largely built from the 60's to the 80's occupying the zone. These medical uses are very valuable in terms of improvement value to land ratios and are therefore unlikely to redevelop themselves.

However, given this major anchor plus the proximity of open spaces such as Stephenson Canyon and Sheridan Park, combined with the presence of modest amounts of developable land and low improvement value ratios at the north and south ends of the segment, there is potential here for new development. This development could take the form of recreational uses, housing, additional medical uses, arts and entertainment uses (Bremerton Community Theater is located here), or limited service uses.

### Segment 3

A great deal of both new development and redevelopment potential exists in Segment 3. The trajectory of this northern-most incorporated area of the City of Bremerton has thus far consisted of older single-family housing tracts from the 50's and 60's, large former institutional uses such as the now-defunct old East Bremerton High School, and more recent large-format, auto-oriented standalone and strip commercial development and shopping centers built mainly in the 70's and 80's. Property values are higher than all but Segment 1.

The greatest potential for new development exists on the school district's very large old Bremerton High School property, as well as on the 20-acre properties abutting Riddell to the south (though these are set back off the main corridor so may have access and visibility issues). However, given relatively low improvement value to land ratios in the mid and large sized commercial parcels fronting the corridor, combined with hundreds of acres of surface parking, significant redevelopment potential may exist in this segment. Uses including multifamily housing, institutional, mixed use commercial and residential, and a variety of general commercial uses would be most likely here.

### Segment 4

The development trajectory of Segment 4 is more recent. Many uses in this unincorporated segment of SR-303 just north of City of Bremerton limits – especially “big box” retail uses such as Lowe's and Fred Meyer – were built as recently as 2012. In fact, most of the commercial development in this segment occurred in the 90's and 2000's. The relative value of these parcels is high, but other parcels are quite low and much vacant land remains here for new development. On the higher value built commercial parcels, redevelopment is unlikely. In addition to self-storage uses, some industrial use is also present here at the northern end of the segment. Also, at the north end of the segment, the large Illahee Nature Preserve fronts on SR-303.

Likely new development in this segment could include industrial uses and recreational uses related to the open space at the north end of the corridor; auto-oriented commercial, big box commercial, and general commercial in the middle of the corridor; and retail, service, and hospitality around the existing node at the Riddell Street end of the segment.

## **City-Led Strategies to Support Economic Development**

The City of Bremerton has a great deal of leverage over how much of an economic impact the proposed improvements to the corridor could have in the region. The City is in a strong position to consider the design and implementation of targeted, strategic policies, regulations, or programs aimed at attracting private investment to the area. In addition to spurring private investment, city-led economic development strategies aimed at the corridor would clearly advertise the City's intentions to property owners, companies, brokers, and site selectors throughout the region.

Citywide efforts, including investments in Downtown Bremerton, can activate additional investment interest in the SR 303 corridor. The City of Bremerton and public and private partners are already taking action that affects the perception of new development and redevelopment in the City. Washington State Opportunity Zones legislation created 139 zones in Washington, including one in downtown Bremerton that encompasses all of segment 1 of the SR-303 corridor. Opportunity Zones are meant to incentivize investment in areas that are economically challenged.

The redevelopment of a former surface parking lot next to the marina as Marina Square is capitalizing on a project specific Opportunity Zone fund. When complete, the project will feature a new 125-room hotel, restaurant/bar, and apartments in two, six-story towers above three levels of subterranean parking. Four blocks away, Quincy Square, named for Quincy Jones, features the restored Roxy Theater and the repurposed Sears and Ford buildings, now called the B Flats apartments, plus restaurants and retail shops.

Other ongoing and new developments in Bremerton should also be recognized in the context of new or revised city-led strategies supporting economic development in the SR-303 corridor. The modern, environmentally friendly Wheaton Way Transit Center, in segment 3 of the study corridor, and the newly renovated Burwell pedestrian tunnel to the Shipyard, one block from the corridor, will have significantly improved the City's transit and pedestrian connectivity. The developers of Marina Square – Sound West Group – also recently completed the Spyglass Hill Apartments project near the Manette Bridge within walking distance to downtown and the ferry terminal to Seattle. Older developments, such as the Norm Dicks Government Center, and the Harborside Condominiums have also been visible

improvements to the revitalized development landscape in the City of Bremerton.

City-led strategies for economic development along the corridor could take many forms. Specific opportunities follow:

- Focus efforts related to new development primarily in the northern regions of the corridor, and efforts aimed at redevelopment, infill, and/or intensification in the southern segments.
- Consider policies to encourage the assembly of the numerous small lots located within the Downtown Subarea Plan's Warren Ave. Downtown Support District zoning category. This would incentivize more of the kind of commercial and medium-density infill and redevelopment that was envisioned for this district. Such development would be transit-oriented by virtue of it being located along Warren Avenue's new improvements related to the Multimodal and Boulevard alternatives (see Potential Impacts section below).
- Create a subarea plan centered around the old East Bremerton High School site in Segment 3 of the corridor. Demolition of large portions of the school facilities, which had been closed for a decade, was completed in late 2018. As of that time, the school district had no immediate plans for the site, but given project growth in the community, the district will likely retain the site as a land bank for future facility needs. While the newly green site is an asset to the community in the meantime – including the refurbished gym building which remains in active use – there is an opportunity for the City to work closely with the school district to ensure that the property remains a community amenity, supports surrounding uses, and can leverage Wheaton Way improvements.
- Create a neighborhood plan for Segment 3 of the corridor, home to a large-format commercial district north of Sylvan Way. This area would benefit significantly from economic development strategies dovetailing with corridor improvements. Specifically, consolidate and redevelop large surface parking lots directly fronting the corridor. Denser, more pedestrian- and bike-accessible commercial and mixed-use development could benefit both existing owners and the corridor's future economic trajectory, as bike, pedestrian, and traffic timing and calming measures are implemented, along with aesthetic improvements. The City could incentivize such activity through zoning reform, design review policy, and / or development regulation reforms in this segment.

# POTENTIAL IMPACTS OF BUILD ALTERNATIVES ON ECONOMIC VITALITY

## Overview of Build Alternatives

Proposed improvements to the SR 303 corridor were grouped into three Build Alternatives:

- **Traffic Management.** This alternative includes various changes to traffic signals along the corridor, improving curb cuts to meet ADA requirements, installing lighting for pedestrians, improving non-motorized travel across the Warren Ave Bridge and improving placemaking and wayfinding for all.
- **Multi-modal.** This alternative is focused on improvements to transit and pedestrian and bicycle travel along the corridor. It includes Transit Signal Priority (TSP) for the full corridor, relocation of some bus stops, Northbound business access transit (BAT) lane, improving pedestrian connectivity from neighborhoods to transit and removing obstructions by locating utilities underground.
- **Boulevard.** This alternative proposes replacing several traffic signals with roundabouts, constructing a median, and like the multi-model alternative it proposes several pedestrian and bike connectivity and accessibility improvements.

The three alternatives were developed through a rigorous and extensive public and stakeholder outreach process. The outreach identified key corridor needs that informed the development of the transportation improvements under each alternative. The alternatives are expected to impact corridor safety, pedestrian and bicycle accessibility and connectivity, travel reliability, access to transit and economic vitality.

## Potential Economic Benefits

To better understand how the proposed alternatives might impact economic vitality along the corridor, we classified each transportation improvement under four main categories of benefits: **transit; traffic; pedestrian/bicycle and aesthetic enhancements**. For each category, we developed a list of potential economic benefits informed by secondary research and the application of professional knowledge and experience. The realization of these economic benefits should not be generally held as it is dependent on other factors such as local economic conditions or economic development planning.

## Transit

Roughly 79% of Bremerton residents work outside the city<sup>1</sup>. Vehicular travel is the preferred commute mode to work in Bremerton. Around 57% of travelers drive alone, while 8% use public transit to get to work<sup>2</sup>. Currently, there is limited accessibility to transit along the SR 303 corridor, the transit system is impacted by traffic operations and there are no bus bypass options. SR 303 is a key north-south commute route for urban areas along the corridor and improving access to transit as well as transit speed and reliability can incentivize more people to use transit.

The potential economic benefits of the proposed transit improvements to the SR 303 corridor are discussed below.

- **Improve commute times, with positive effects on productivity**
- **Enhance labor market access for local businesses**
- **Improve access to work and non-work destinations along the corridor**
- **Increase retail traffic for local businesses**
- **Provide greater connectivity to surrounding residential communities**

The multi-modal alternative establishes **BAT lanes** on some segments of the SR 303 corridor, where the outside lanes would be reserved for buses and right-turning vehicles only. BAT lanes improve access to businesses and residences, decrease route travel times and increase predictability. They also enhance the capacity of the remaining travel lanes by removing buses from the general traffic.

In addition to BAT lanes, the multi-modal alternative also proposes implementing **transit signal priority** for the full length of the SR 303 corridor. TSP can reduce transit travel times, improve transit schedule reliability, and make transit more attractive.

An example of effective transit speed and reliability improvements is the RapidRide E Line service, which connects Downtown Seattle to Shoreline and the Aurora Village Transit Center. The project included several transit improvements, including BAT lanes and transit signal priority at twenty intersections. King County Metro found that BAT lanes saved up to 6.1

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<sup>1</sup> U.S. Census Bureau, 2017.

<sup>2</sup> City of Bremerton, 2016 Comprehensive Plan, Transportation Appendix

minutes per trip and TSP saved up to 1.8 minutes per trip, which together constitute around 20% of the total route trip time<sup>3</sup>.

Other proposed transit upgrades to the SR 303 corridor include relocating several bus stops closer to crossings, improving neighborhood connectivity to transit stops and the Wheaton Way Transit Center and reducing gaps in transit stops along the corridor.

Improved transit services can increase productivity in several ways. These include better access to jobs, training, and education<sup>4</sup>; reduced traffic impacts such as congestions delays, accidents, tolls, and parking fees; more compact and efficient land use and development; and supporting local industries and businesses<sup>5</sup>. For a local business in the SR-303 corridor, BAT lanes and signal timing could, for example, increase the business's access to labor, reduce employee lateness due to traffic, reduce employee parking and vehicle costs and increase customer access.

## Traffic

SR 303 connects downtown Bremerton to the Washington State Ferries and the Naval Shipyard. Travel times along the corridor can vary significantly from one day to the next, impacting travel reliability and people's ability to get to work on time and the ferries. Traffic is expected to grow by about 16% citywide by 2030 and 30% by 2040. Existing data on corridor safety shows there have been 1,200 crashes in the last 5 years, with serious injuries and two fatalities.

The potential economic benefits of the proposed traffic improvements to the SR 303 corridor are discussed below.

- **Improve traffic flow, with positive effects on productivity**
- **Increase corridor safety and reduce healthcare costs**
- **Improve access to businesses along the corridor**

Several proposed improvements to the SR 303 corridor are meant to address travel time reliability. The Boulevard alternative proposes roundabouts at

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<sup>3</sup> Transit Speed and Reliability Guidelines and Strategies, King County Metro, March 2017.

<sup>4</sup> Christopher Porter, Jonathan Lee, Taylor Dennerlein and Paula Dowell (2015), Selected Indirect Benefits of State Investment in Public Transportation, Research Results Digest 393, NCHRP Project 20-65, Task 52, National Cooperative Highway Research Program.

<sup>5</sup> CTOD (2011), Transit and Regional Economic Development, Center for Transit Oriented Development.

several intersections along the corridor, while the Traffic Management alternative introduces green wave signal timing.

Roundabouts and signal control calm traffic, making nearby business signage more visible. The slower speed of traffic gives drivers a better chance of seeing signs and locating the building. A business located along the SR 303 corridor may often be avoided by customers because it is perceived as unsafe to access. Installing roundabouts along the corridor can lead to fewer and lower speed conflicts at the entrance and exit from the business. Also, with a roundabout, if a driver misses a left turn, a U-turn can easily and safely be made at the roundabout.

Roundabout adoption has been shown to have positive impacts on safety. A study that looked at the safety effect of 2,400 roundabouts installed in the United States between 1990 and 2014 found that roundabouts averted between 38,000 and 53,000 injury crashes, saving over \$9 billion in societal costs during that period.<sup>6</sup>

Roundabouts can also move vehicles through an intersection with less congestion than a signalized intersection. Traffic is not required to stop - only yield, so more traffic can flow through the intersection in the same amount of time. The Insurance Institute for Highway Safety published studies in Kansas, Maryland and Nevada that showed a reduction in delays by 19%, 23% and 13% respectively, as a result of roundabouts.

Improvements to traffic that reduce commute times can have a positive impact on productivity. Research shows that urban areas where employees travel less time to get to work are likely to be more productive than the ones where commute times are longer, everything else being equal. A study by The Reason Foundation which looked at job accessibility in eight US urban markets, including Seattle, found that for each 10% increase in the number of jobs accessible within a 25 minute commute, there was a 1% increase in productivity as measured by the Gross Domestic Product of the urban area<sup>7</sup>.

Faster travel times, better access control, fewer accidents and lower delay at business access points all contribute to an increase in economic activity. Golden Colorado experienced a 60% increase in sales tax revenues in six years

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<sup>6</sup> FHWA Research and Technology Evaluation, Roundabout Research, June 2018.

<sup>7</sup> Gridlock and Growth: The Effect of Traffic Congestion on Regional Economic Performance, Reason Foundation, August 2009.

and over 75,000 square feet of retail/office space has been built along the corridor that recently installed four roundabouts<sup>8</sup>.

## Pedestrian/Bicycle

The SR 303 corridor study has found that the corridor lacks consistent, delineated pedestrian and bicycle connectivity both along and across the corridor. Sidewalks are narrow, with 1 mile of sidewalk gaps identified and multiple obstructions both north and south of the bridge. This lack of connectivity discourages walking and biking and creates possible safety issues.

The potential economic benefits of the proposed pedestrian and bicycle improvements to the SR 303 corridor are discussed below.

- **Increase corridor safety and reduce healthcare costs**
- **Increase retail traffic for local businesses**
- **Provide greater connectivity to surrounding residential communities**

All three Build Alternatives propose installing more pedestrian lighting, relocating obstructions to non-motorized pathways, and removing utilities from sidewalks. The Multimodal and Boulevard alternatives include several new pedestrian crossings, wider and complete sidewalks, and improved connectivity from neighborhoods to transit. Several improvements are also proposed to the Warren Ave Bridge, including installing a cycle track on both sides of the bridge and improving non-motorized connection to 18<sup>th</sup> Street south of the bridge.

Research suggests that policies that increase the number of people walking and biking appear effective to improving the safety of all roadway users. Greater safety for all road users may result from reaching a threshold of bicyclist and pedestrian volumes that compels motorists to drive more carefully. In their review of over 35 complete streets projects, Smart Growth America found that these projects averted \$18.1 million in collision and injury costs in 1 year<sup>9</sup>. All projects reviewed (including three in Washington state) include measures that enable safe access for all users, including pedestrians, bicyclists, motorists, and transit riders.

In their study, Smart Growth American also found that areas with bicycle, pedestrian, and transit friendly environments experienced an increase in

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<sup>8</sup> Hartman, Dan, and Ariniello, Alex J. (2005), Are Roundabouts Good for Business?, TRB National Roundabout Conference Presentation, LSC Transportation Consultants, Inc. and City of Golden, Colorado.

<sup>9</sup> Smart Growth America, National Complete Streets Coalition. Safer Streets, Stronger Economies, March 2015.

retail sales following the completion of the complete streets project in that area. This is in line with multiple other studies that have found that those who bike or walk to work or retail stores make more frequent trips and spend more per month than those who drive<sup>10</sup>.

The new and upgraded facilities for people walking and biking along the corridor can improve access for employees using transit or non-motorized modes to get to work in the area. Roughly 14% of Bremerton households do not have a motor vehicle for their use<sup>11</sup>. Providing transportation options for these people increases their mobility and access to jobs and services.

Studies have also shown that property values may also benefit from nearby investments in bicycle, pedestrian, and transit infrastructure improvements. Walkability is commonly used nowadays as a real estate investment tool. A study of 30 large metropolitan areas found that walkable urban locations outperformed sprawling suburban locations over a period of five years in terms of rent premiums, as well as retail and commercial properties sales<sup>12</sup>.

## Aesthetic enhancements

Many of the proposed transportation improvements, from more pedestrian lighting to roundabouts and adding a median, can change the look and feel of the corridor.

The potential economic benefits of the proposed aesthetic improvements to the SR 303 corridor are discussed below.

- **Attract more people to move to the area**
- **Incentivize business investment**

Aesthetic improvements have the potential to improve the quality of life and attractiveness for additional new development or redevelopment. If people love where they live and work, the more economically vital a place will be. Attracting and keeping educated, creative, and talented workers is critical to economic success. States, regions, and cities have become increasingly concerned about how to attract not just businesses, but individual entrepreneurs and young skilled workers, in general, who increasingly put emphasis on quality of life in their location decisions. Also, they will soon become very aware of the mobility of experienced, energetic retiring/semi-

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<sup>10</sup> Transportation Alternatives. (2012). East Village Shoppers Study: A Snapshot of Travel and Spending Patterns of Residents and Visitors in the East Village. New York City: Transportation Alternatives.

<sup>11</sup> U.S. Census Bureau, American Community Survey, 2018.

<sup>12</sup> George Washington University School of Business, Smart Growth America. Foot Traffic Ahead, 2016.

retiring Baby Boomers looking for places to call home that offer opportunities to continue to work, play, contribute to society, and make money<sup>13</sup>.

The results of a recent survey of 150 founders of some of the nation's fastest growing entrepreneurs by the private research entity Endeavor Insight offers evidence that cities should focus on the "factors and conditions that attract the talented, educated workers that fast-growing entrepreneurial enterprises need<sup>14</sup>." The most important factors in their location decisions were: 1) access to talent— that means going to those places that talented workers want to live; 2) access to major multimodal transportation networks; and 3) proximity to customers and suppliers. At the very bottom of the list were taxes and business-friendly policies.

## Scoring Output

Each transportation improvement was given a score which was calculated based on the number of benefits under each category and a category weighting. The three alternatives were ranked from 1 to 4 compared to the No Build Alternative based on the total score for each corridor segment. The Multimodal alternative ranked highest overall in terms of potential economic benefits, with the Boulevard alternative coming in second.

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<sup>13</sup> Wyckoff, Mark (2017), Placemaking As An Economic Development Tool: A Placemaking Guidebook, Land Policy Institute and the Planning & Zoning Center at Michigan State University

<sup>14</sup> Endeavor Insight (2014), Endeavor Insight Report Reveals the Top Qualities that Entrepreneurs Look for in a City."

**Exhibit 13: Economic Vitality Scoring Output, All Segments, 2020**

Segment	Alternative	Economic Vitality	
		Score	Rank
1	No Build	0	4
	Traffic Management	13	3
	Multimodal	30	1
	Boulevard	15	2
2	No Build	0	4
	Traffic Management	9	3
	Multimodal	17	2
	Boulevard	24	1
3	No Build	0	4
	Traffic Management	9	3
	Multimodal	43	1
	Boulevard	40	2
4	No Build	0	4
	Traffic Management	5	3
	Multimodal	13	1
	Boulevard	12	2
TOTAL	No Build	0	4
	Traffic Management	36	3
	Multimodal	102	1
	Boulevard	89	2

*Source: Community Attributes, 2020.*

## Potential Impacts of the Preferred Build Alternative

The Preferred Build Alternative includes a mix of elements from the three Build Alternatives proposed initially, including Traffic-Management, Multimodal and Boulevard (see Appendix A for Preferred Alternative details). The Preferred Alternative will provide economic benefits to the SR 303 corridor area from improving transit access and mobility, traffic flow, pedestrian and bicycle connectivity and the look and feel of the corridor. Major improvements include:

- **Transit signal priority** at signalized intersections on the Burwell to 16th Street and 16th Street to Sheridan segments of the SR 303 corridor, and a **northbound BAT lane** on the 16th to Sheridan and Sheridan to Riddell Road segments.
- Traffic improvements such as providing **updated traffic signal equipment** for active traffic management options and **new**

**roundabout intersections** at 11<sup>th</sup> St, Callahan Dr, and NE Riddell Road and.

- Pedestrian and bicycle improvements, including **new intersection pedestrian crossings and signalization** at existing crossings from Burwell to 16<sup>th</sup> Street, and **new mid-block crossings and pedestrian refuges**.
- Aesthetic improvements, such as **undergrounding utilities** along the corridor, **updating buffers** on both sides of the corridor consistent with context and traffic calming strategies.

## Transit Improvement Benefits

The corridor upgrades within the Preferred Alternative (**Appendix A**) will improve transit mobility and travel times, enhance the attractiveness of transit, and reduce overall traffic interruptions when buses stop for passengers. Similar transit improvements to those proposed for the SR 303 corridor were implemented along the RapidRide E Line service route, which connects Downtown Seattle to Shoreline and the Aurora Village Transit. King County Metro found that BAT lanes saved up to 6.1 minutes per trip, while Transit Signal Priority saved up to 1.8 minutes per trip, which together constitute around 20% of the total route trip time<sup>15</sup>.

Better transit service along the SR 303 corridor will also benefit accessibility to both employment and non-work destinations. Residents in the SR 303 corridor study area will experience an improvement in transportation options available to access jobs, education, healthcare, and other services. The improvements may also enhance labor market access for local businesses.

## Traffic Improvement Benefits

Proposed traffic improvements for the corridor (**Appendix A**) will improve the flow and efficiency of traffic, increasing commuter and worker productivity and expanding access to businesses along the corridor. Many of these improvements will also increase safety by reducing vehicular accidents, such as the replacement of double left turn lanes with a turn lane protected by a median to reduce unprotected left turns to and from the center lane.

A study that looked at the safety effect of 2,400 roundabouts installed in the United States between 1990 and 2014 found that they averted between 38,000 and 53,000 injury crashes, saving over \$9 billion in societal costs during that period.<sup>16</sup>

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<sup>15</sup> Transit Speed and Reliability Guidelines and Strategies, King County Metro, March 2017.

<sup>16</sup> FHWA Research and Technology Evaluation, Roundabout Research, June 2018.

## Pedestrian & Bicycle Improvement Benefits

The preferred pedestrian and bicycle improvements along the corridor will enhance pedestrian safety, improve accessibility to and from transit stops, and reduce the distance between intersections for pedestrians to cross. Such increases in walkability have been shown to contribute to a dramatic increase in rental rate premiums over non-walkable locations: a study by Smart Growth America found premiums for walkable urban office (90 percent), retail (71 percent), and rental multi-family (66 percent) over drivable sub-urban products<sup>17</sup>.

The Warren Ave. Bridge will be upgraded to provide traffic calming and will add 10' shared use paths on either side, increasing safety as well as residential and employment accessibility for pedestrians and bicyclists. Research by the U.S. Department of Transportation found that installing a shared path may reduce current fatal and non-fatal crashes involving bicyclists by 25%<sup>18</sup>. This may result cost savings associated with traffic collisions such as property damage, emergency services, traffic delays, medical and rehabilitation care, lost productivity and disability compensation costs, and non-market costs, including pain, grief, and reduced quality of life.

## Aesthetic Improvement Benefits

The aesthetic improvements outlined in the Preferred Alternative (**Appendix A**) will render the corridor more visually cohesive and attractive – and will also improve bicycle and pedestrian safety by making the full width of the sidewalk available and obstruction free. A buffer will be added between the curb and sidewalk at various locations will provide a safety buffer between the road and sidewalk, along with improving the aesthetics for businesses along these segments.

Aesthetic improvements have been shown to improve the quality of life for residents and visitors – and to attract new development or redevelopment interest to an area. In Shoreline Washington, significant private economic investment followed the completion of improvements to the Aurora Corridor (SR 99) from N 145th to N 205th over a 10-year period (2005-2015)<sup>19</sup>:

- Millions of square feet of new and redeveloped multi-family residential and commercial development with a valuation of \$318.6 million (as of January 2019).

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<sup>17</sup> Smart Growth America, National Complete Streets Coalition. Safer Streets, Stronger Economies, March 2015.

<sup>18</sup> Statewide Analysis of Bicycle Crashes, Alluri et al., 2017.

<sup>19</sup> City of Shoreline, 2019.

- 1,290 new units of multi-family housing, with 379 units of affordable housing (as of April 2018).
- Another 643 units of multi-family units (177 affordable) in the permit or pre-permit process (as of April 2018).

## APPENDIX A: PREFERRED ALTERNATIVE BY SEGMENT

	Location	Element	Project Need Met	Benefit	Issues
Burwell to 16th Street	Burwell Street to Warren Ave Bridge	<ul style="list-style-type: none"> <li>* Include TSP at signalized intersections</li> <li>* Include updated traffic signal equipment for active traffic management options</li> <li>* Convert northbound approach at Burwell to right-in-right-out (RIRO)</li> </ul>	Reliability/Travel Time Transit	*Provides flexibility for improved traffic operations and optimizing efficiency of existing roadway capacity.	*Requires off-site control area with dedicated computer system and operator. Cost for operations and maintenance.
	6th Street to 11th Street	Build a mid-block pedestrian crossing between 6th Street and 11th Street and provide RRFB or High-Intensity Activated Crosswalk (HAWK) signal and pedestrian refuge	Ped/Bike Safety	<ul style="list-style-type: none"> <li>* Improves accessibility to/from transit stops.</li> <li>* Improves safety for pedestrians</li> <li>* Provides an early benefit for people trying to access transit.</li> </ul>	
	Burwell Street to 8th Street	<ul style="list-style-type: none"> <li>* Remove center median between 4th Street and 5th Street; replace with c-curb</li> <li>* Extend northbound left-turn lane at 6th</li> <li>* Rectangular Rapid Flashing Beacon (RRFB) or PHB at 4th and 5th Street</li> <li>* Add bus stops between 6th Street and 11th Street</li> </ul>	Reliability / Travel Time Safety Ped/Bike	*Provides width for adding northbound lane without impacting right of way	*4 <sup>th</sup> and 5 <sup>th</sup> are part of the designated bicycle route through Bremerton and cyclist would be required to use pedestrian crossing.
	11th Street	<ul style="list-style-type: none"> <li>* Roundabout at 11th Street</li> <li>* Design should support and include all City of Bremerton non-motorized planning improvements</li> </ul>	Reliability/Travel Time	Reduce delay and improve mobility by adding capacity	*Impacts adjacent right-of-way. Moderate traffic interruption for construction.
	13th Street to Warren Ave Bridge	<ul style="list-style-type: none"> <li>* Close 18th Street southbound ramp access (conclusion upon further coordination)</li> <li>* Relocate bus stops to 13th Street intersection</li> <li>* Extend northbound left-turn lane storage at 16th Street to 275 feet</li> <li>* Underground utilities that would otherwise be obstructions in the sidewalks</li> <li>* Widen sidewalk on west side of Warren Ave to 10 feet between 17th Street to 13th Street. Do not include 3' buffer</li> </ul>	Reliability / Travel Time Safety Ped/Bike	<ul style="list-style-type: none"> <li>* Improves safety by removing conflict point and weave</li> <li>* Extending NB LT accommodates demand, including transit vehicles, and prevents NB LTs from queuing into NB TH lanes.</li> </ul>	*Impacts to ROW
	Burwell Street to 13th Street	<ul style="list-style-type: none"> <li>* Widen sidewalks or construct new sidewalks to be 10' on both sides of SR 303 with 6' buffers</li> <li>* Underground utilities that would otherwise be obstructions in the sidewalks</li> <li>* Design should support and include all City of Bremerton non-motorized planning improvements</li> </ul>	Ped/ Bike	* Improves safety and access for pedestrians and bicyclists	

	Location	Element	Project Need Met	Benefit	Issues
16th Street to Sheridan	Warren Ave Bridge to Sheridan Road	<ul style="list-style-type: none"> <li>* Include TSP at signalized intersections</li> <li>* Include updated traffic signal equipment for active traffic management options</li> </ul>	Reliability/Travel Time Transit	*Provides flexibility for improved traffic operations and optimizing efficiency of existing roadway capacity.	*Requires off-site control area with dedicated computer system and operator. Cost for operations and maintenance.
	Warren Ave Bridge	<ul style="list-style-type: none"> <li>* Widen Warren Avenue Bridge to include 10' shared use path on both sides</li> <li>* Narrow lanes on Warren Avenue Bridge to 11'</li> <li>* Include center barrier on Warren Avenue Bridge</li> <li>* Widen sidewalk on Warren Avenue to 10 feet from south end of bridge to north side of 17th Street. Include 3' wide buffer</li> <li>* Belvederes on either side of the bridge</li> <li>* Includes pedestrian connections at both north and south ends that are forward compatible with long term plan</li> <li>* Pedestrian connection to <u>Lebo</u> on the northeast side of the bridge</li> </ul>	Safety Ped/Bike	<ul style="list-style-type: none"> <li>*Provides safe width for cyclists and pedestrians to cross Port Washington Narrows to access higher density population area in Eastside Employment Center and Olympic College.</li> <li>*Would include new decking material in response to recent pothole.</li> </ul>	*Cost; <u>however</u> funding is already available for design and WSDOT Structures group will be designing bridge
	North end of Warren Ave Bridge to south of Sheridan Road	Update low maintenance landscaping or hardscape adjacent to SR 303 consistent with corridor context and traffic calming strategies	Safety	*Including landscape features early outlines the more urban feel and helps with traffic calming	*Operations and maintenance cost
	North end of Warren Ave Bridge to south of Sheridan	<ul style="list-style-type: none"> <li>* Provide curb, gutter, 10' sidewalks and 6' wide low maintenance landscape or hardscape buffer on both sides of SR 303 from north end of Warren Avenue Bridge to Sheridan</li> <li>* Underground utilities that would otherwise be obstructions in the sidewalks</li> <li>* Maintain/retrofit Callahan undercrossing for use as pedestrian tunnel</li> <li>* Design should support and include all City of Bremerton non-motorized planning improvements</li> </ul>	Ped/Bike	* Improves safety for pedestrians and bicyclists	*Operations and maintenance cost
	Callahan Drive/Clare Avenue	<ul style="list-style-type: none"> <li>* Provide new roundabout intersection at Callahan Drive/Clare Avenue</li> <li>* Would include TSP at intersection</li> <li>* Design should support and include all City of Bremerton non-motorized planning improvements</li> </ul>	Reliability / Travel Time Safety Economic	*Intersection at Callahan beneficial for Eastside Employment Center	*Operations and maintenance cost

	Location	Element	Project Need Met	Benefit	Issues
Sheridan to Riddell	Sheridan Road to NE Riddell Road	<ul style="list-style-type: none"> <li>* Include TSP at signalized intersections</li> <li>* Include updated traffic signal equipment for active traffic management options</li> </ul>	Reliability/Travel Time Transit	Provides flexibility for improved traffic operations and optimizing efficiency of existing roadway capacity.	*Requires off-site control area with dedicated computer system and operator. Cost for operations and maintenance.
	Dobb Street	Build a mid-block pedestrian crossing north of Dobb Street and provide High-intensity Activated Crosswalk (HAWK) signal and pedestrian refuge	Ped/Bike Safety	<ul style="list-style-type: none"> <li>*Reduces the distance between intersections for pedestrians to cross.</li> <li>* Improves accessibility to/from transit stops.</li> <li>* Improves safety for pedestrians.</li> <li>* Provides an early benefit for people trying to access transit.</li> </ul>	*Cost and traffic impacts during construction
	Pearl Street	Build a mid-block pedestrian crossing north of Pearl Street and provide High-intensity Activated Crosswalk (HAWK) signal and pedestrian refuge	Ped/Bike Safety	<ul style="list-style-type: none"> <li>*Reduces the distance between intersections for pedestrians to cross.</li> <li>* Improves accessibility to/from transit stops.</li> <li>* Improves safety for pedestrians.</li> <li>* Provides an early benefit for people trying to access transit.</li> </ul>	*Cost and traffic impacts during construction
	South of NE Riddell Road	Build a mid-block pedestrian crossing south of NE Riddell Road and provide High-intensity Activated Crosswalk (HAWK) signal and pedestrian refuge	Ped/Bike Safety	<ul style="list-style-type: none"> <li>*Reduces the distance between intersections for pedestrians to cross.</li> <li>* Improves accessibility to/from transit stops.</li> <li>* Improves safety for pedestrians.</li> <li>* Provides an early benefit for people trying to access transit.</li> </ul>	*Cost and traffic impacts during construction
	South of Sheridan Road through Sylvan Way	<ul style="list-style-type: none"> <li>* Include a northbound business access transit (BAT) The lane would extend from 500' south of the Callahan intersection to Sylvan Way (ultimately extends north to Hollis Street)</li> <li>* Provide southbound <u>u-turns</u> at Sheridan Road</li> <li>* Replace two way left turn lane with 3' – 5' wide median with breaks at intersections (Sheridan Road to Sylvan Way)</li> <li>* Provide median break for southbound left at Old East Bremerton High School entrance</li> <li>* Provide northbound and southbound <u>u-turns</u> at Sylvan Way</li> <li>* Include low maintenance landscape or hardscape buffer between curb and sidewalk at various locations</li> </ul>	Transit Safety Economic	<ul style="list-style-type: none"> <li>* Median and buffer provides early safety benefit.</li> <li>* BAT lane will provide transit with a queue bypass to enter the roundabout with less traffic and helps maintain travel time reliability</li> <li>* Building median and BAT lane at the same time eliminates need to come back and rip up roadway again; assumes minimum 57 feet curb to curb (four <u>10.5 foot</u> GP lanes, 3 foot paved median, 12 foot BAT lane)</li> </ul>	<ul style="list-style-type: none"> <li>* Right of way impacts would require negotiation for partial for full takes</li> <li>* Education about transit queue jump and possibly enforcement</li> </ul>
	Sylvan Way to south of NE Riddell Road	<ul style="list-style-type: none"> <li>* Include northbound BAT lane from Sylvan Way to Hollis Street where it terminates as a right turn only lane</li> <li>* Replace two way left turn lane with 3' – 5' wide median with breaks at intersections (Sylvan Way to NE Riddell Road)</li> <li>* Provide northbound and southbound <u>u-turns</u> at Hollis Street</li> </ul>	Transit Safety Economic	<ul style="list-style-type: none"> <li>* BAT lane will provide transit with a queue bypass to enter the roundabout with less traffic and helps maintain travel time reliability</li> <li>* Building median and BAT lane at the same time eliminates need to come back and rip up roadway again; assumes minimum 57 feet curb to curb (four <u>10.5 foot</u> GP lanes, 3 foot paved median, 12 foot BAT lane)</li> </ul>	*Right of way impacts would require negotiation for partial for full takes
	South of Sheridan Road through Sylvan Way	<ul style="list-style-type: none"> <li>* Widen sidewalks to 10' on both sides of SR 303</li> <li>* Include 6' wide low maintenance landscape or hardscape buffer between curb and sidewalk at various locations</li> <li>* Underground utilities that would otherwise be obstructions in the sidewalks</li> <li>* Design should support and include all City of Bremerton non-motorized planning improvements</li> </ul>	Ped/ Bike	* Improves safety and access for pedestrians and bicyclists	
	Sylvan Way to south of NE Riddell Road	<ul style="list-style-type: none"> <li>* Widen sidewalks or construct new sidewalks to be 10' on both sides of SR 303 with 6' buffers</li> <li>* Design should support and include all City of Bremerton non-motorized planning improvements</li> </ul>	Ped/ Bike	* Improves safety and access for pedestrians and bicyclists	
	NE Riddell Road	<ul style="list-style-type: none"> <li>* Replace signal at NE Riddell Road with a 2-lane roundabout including pedestrian crossings at all four quadrants</li> <li>* Design should support and include all City of Bremerton non-motorized planning improvements</li> </ul>	Reliability / Travel Time Safety	<ul style="list-style-type: none"> <li>* Roundabouts reduce crash severity, improve pedestrian safety, and provide a sustainable solution for traffic control</li> <li>* Forecasted to be LOS D in 2030, so need in long-term</li> </ul>	*Additional right of way required, modification to access, public education, cost, traffic impacts during construction

	Location	Element	Project Need Met	Benefit	Issues
Riddell to Fairgrounds	NE Riddell Road to NE McWilliams Road	* Include TSP at signalized intersections * Include updated traffic signal equipment for active traffic management options	Reliability/Travel Time Transit	Provides flexibility for improved traffic operations and optimizing efficiency of existing roadway capacity.	*Requires off-site control area with dedicated computer system and operator. Cost for operations and maintenance.
	North of NE Riddell Road through <u>Fuson Road</u>	* Replace two way left turn lane and center median with a new 3' – 5' wide median with breaks at intersections and at specified locations * Provide northbound and southbound <u>u-turns</u> at NE <u>Furness</u> Lane * Reconfigure east leg of NE <u>Furness</u> Lane to reduce pedestrian crossing distance; Add pork chop island for northbound right-turn lane. * Provide northbound and southbound <u>u-turns</u> at NE <u>Fuson</u> Road	Transit Safety Economic	*Improves safety along the corridor by reducing unprotected left turn movements to and from the center lane	*Possible environmental issues/mitigation required at some locations due to widening
	North of NE Riddell Road through NE <u>Fuson</u> Road	* Widen sidewalks or construct new sidewalks to be 10' on both sides of SR 303; provide 6' buffer	Ped/Bike	*Improves safety along the corridor by reducing unprotected left turn movements to and from the center lane	*Possible environmental issues/mitigation required at some locations due to widening
	North of NE <u>Fuson</u> Road through NE McWilliams Road	* Provide southbound and northbound <u>u-turns</u> at NE McWilliams Road * Underground utilities that would otherwise be obstructions in the sidewalks * Widen sidewalks or construct new sidewalks to be 10' on both sides of SR 303 * Include 6' wide low maintenance landscape or hardscape buffer between curb and sidewalk * Design should support and include all Kitsap County non-motorized planning improvements	Ped/Bike	*Maintains business and residential access	*Additional right of way required
	North of McWilliams to NE Fairgrounds Road	* Add <u>10 foot</u> sidewalks on both sides of SR 303 with 6 foot buffers	Ped/Bike	* Improves walkability and safety * Provides consistency with overall corridor plan	
	NE Bentley Drive	* Roundabout at Bentley	Reliability / Travel Time Safety	See Note	
	NE Fairgrounds Road	* Roundabout at Fairgrounds	Reliability / Travel Time Safety	See Note	

	Location	Element	Project Need Met	Benefit	Issues
Off Corridor Improvements	Off corridor	Add bicycle facilities between Warren Avenue and Park Avenue	Ped/Bike	* Improves accessibility across corridor	
	Off corridor	Add bicycle facilities on Almira Drive from Sylvan Way to NE <u>Fuson</u> Road	Ped/Bike	* Consistent with City Comprehensive Plan * Improves walkability within and between neighborhoods along the SR 303 Corridor. * Improves bicycle connectivity and improves its use as an alternative mode to driving. * Improves accessibility to transit	
	Off corridor	Add bicycle facilities on Cherry Street between new Callahan Drive path connection and Sheridan Road. (Continued coordination with Eastside Employment Center Draft Environmental Impact Statement request to realign Wheaton Way with Spruce Ave and potential realignment of bicycle route to that corridor.)	Ped/Bike	* Consistent with City Comprehensive Plan * Improves walkability within and between neighborhoods along the SR 303 Corridor. * Improves bicycle connectivity and improves its use as an alternative mode to driving. * Improves accessibility to transit	*Right of way impacts, permitting
	Off corridor	Add bicycle facilities on Callahan Drive to connect to Sheridan Park area using shared use tunnel under SR 303	Ped/Bike	* Consistent with City Comprehensive Plan * Improves walkability within and between neighborhoods along the SR 303 Corridor. * Improves bicycle connectivity and improves its use as an alternative mode to driving. * Improves accessibility to transit	*Maintain tunnel under SR 303
	Off corridor	* Provide neighborhood connectivity by building 6' - 10' sidewalks at the following locations: * Almira to SR 303 using NE 32nd Street through Old East Bremerton High School connecting near <u>Dobb</u> Street * From Pine Rd NE to Wheaton Way Transit Center using NE Normandy Dr or NE Roswell Dr to access <u>Clogston</u> Ave NE. Need agreement with private property owner to finalize connection to E Broad St.	Ped/Bike	* Consistent with City Comprehensive Plan * Improves walkability within and between neighborhoods along the SR 303 Corridor. * Improves bicycle connectivity and improves its use as an alternative mode to driving. * Improves accessibility to transit	*Right of way impacts, permitting
	Off corridor	Complete a paved shared use connection from Almira Drive to Cherry Street.	Ped / Bike	* Consistent with City Comprehensive Plan * Improves walkability within and between neighborhoods along the SR 303 Corridor. * Improves bicycle connectivity and improves its use as an alternative mode to driving. * Improves accessibility to transit	*Right of way impacts, permitting
	South of Warren Avenue Bridge	Non-motorized 18th Street connection through Olympic College to Broadway		*Improves pedestrian/bicycle access to Broadway where lower grade connections to the City active transportation network are available.	*Olympic College impacts *Possible property impacts on Broadway
	18th Street	Pedestrian tunnel under SR 303, connecting Olympic College to eastside of SR 303,		*Improves east/west connectivity from SR 303 to the City planned active <u>transportation</u> network	*Cost *Tunnel maintenance *ROW impacts to reach Park

